

ARIZONA DEPARTMENT OF HEALTH SERVICES  
AMENDMENTS  
TO  
RULES AND REGULATIONS  
FOR  
AIR POLLUTION CONTROL

December 7, 1978

INDEX  
CHAPTER 3  
AIR POLLUTION CONTROL  
ARTICLE 1. DEFINITIONS

Section  
R9-3- 01. Reserved.  
R9-3-100.  
R9-3-101. Definitions.

ARTICLE 2. AMBIENT AIR QUALITY STANDARDS

R9-3-201. Non-specific particulate.  
R9-3-202. Sulfur dioxide.  
R9-3-203. Non-methane hydrocarbons.  
R9-3-204. Photochemical oxidants.  
R9-3-205. Carbon monoxide  
R9-3-206. Nitrogen dioxide.  
R9-3-207. Reserved.  
R9-3-208. Reserved.  
R9-3-209. Reserved.  
R9-3-210. Reserved.  
R9-3-211. Reserved.  
R9-3-212. Reserved.  
R9-3-213. Reserved.  
R9-3-214. Reserved.  
R9-3-215. Reserved.  
R9-3-216. Evaluation of air quality data.  
R9-3-217. Attainment areas; classification and standards.  
R9-3-218. Violations.  
R9-3-219. Air pollution emergency episodes.

ARTICLE 3. PERMITS

R9-3-301. Installation permits.  
R9-3-302. Installation permits in nonattainment areas.  
R9-3-303. Offset standards.  
R9-3-304. Installation permits in attainment areas.  
R9-3-305. Air quality impact analysis and monitoring requirements.  
R9-3-306. Operating permits.  
R9-3-307. Replacement.  
R9-3-308. Permit conditions.  
R9-3-309. Finding of no violation.  
R9-3-310. Test methods and procedures.  
R9-3-311. Air quality models.  
R9-3-312. Performance tests.  
R9-3-313. Existing source emission monitoring.  
R9-3-314. Excess emissions reporting.

- R9-3-315. Posting of permit.
- R9-3-316. Notice by building permit agencies.
- R9-3-317. Permit nontransferrable; exception.
- R9-3-318. Denial or revocation of an installation or operating permit.
- R9-3-319. Permit fees.

#### ARTICLE 4. EMISSIONS FROM EXISTING AND NEW NON-POINT SOURCES

- R9-3-401. General.
- R9-3-402. Unlawful open burning.
- R9-3-403. Forestry management.
- R9-3-404. Open areas.
- R9-3-405. Roadways and streets.
- R9-3-406. Material handling.
- R9-3-407. Storage piles.
- R9-3-408. Mineral tailings.
- R9-3-409. Agricultural practices.
- R9-3-410. Evaluation of non-point source emissions.

#### ARTICLE 5. EXISTING STATIONARY POINT SOURCE PERFORMANCE STANDARDS

- R9-3-501. Visible emissions: general.
- R9-3-502. Unclassified sources.
- R9-3-503. Standards of performance for existing fossil-fuel fired steam generators and general fuel burning equipment.
- R9-3-504. Standards of performance for incinerators.
- R9-3-505. Standards of performance for existing portland cement plants.
- R9-3-506. Standards of performance for existing nitric acid plants.
- R9-3-507. Standards of performance for existing sulfuric acid plants.
- R9-3-508. Standards of performance for existing asphalt concrete plants.
- R9-3-509. Standards of performance for existing petroleum refineries.
- R9-3-510. Standards of performance for existing storage vessels for petroleum liquids.
- R9-3-511. Standards of performance for existing secondary lead smelters.
- R9-3-512. Standards of performance for existing secondary brass and bronze ingot production plants.
- R9-3-513. Standards of performance for existing iron and steel plants.
- R9-3-514. Standards of performance for existing sewage treatment plants.
- R9-3-515. Standards of performance for existing primary copper smelters.
- R9-3-516. Standards of performance for existing coal preparation plants.
- R9-3-517. Standards of performance for steel plants: existing electric arc furnaces.
- R9-3-518. Standards of performance for existing kraft pulp mills.
- R9-3-519. Standards of performance for existing stationary rotating machinery.
- R9-3-520. Standards of performance for existing lime manufacturing plants.
- R9-3-521. Standards of performance for existing non-ferrous metals industry sources.
- R9-3-522. Standards of performance for existing gravel or crushed stone processing plants.
- R9-3-523. Standards of performance for existing concrete batch plants.

- R9-3-524. Standards of performance for existing fossil-fuel fired industrial and commercial equipment.
- R9-3-525. Standards of performance for existing dry cleaning plants.
- R9-3-526. Sandblasting operations.
- R9-3-527. Spray painting operations.
- R9-3-528. Standards of performance for existing ammonium sulfide manufacturing plants.
- R9-3-529. Standards of performance for existing cotton gins. (Reserved)

#### ARTICLE 6. EMISSIONS FROM MOBILE POINT SOURCES (NEW AND EXISTING)

- R9-3-601. General.
- R9-3-602. Off-road machinery.
- R9-3-603. Heater-planer units.
- R9-3-604. Roadway and site cleaning machinery.
- R9-3-605. Asphalt or tar kettles.

#### ARTICLE 7. NON-FERROUS SMELTER ORDERS

##### RESERVED

#### ARTICLE 8. NEW SOURCE PERFORMANCE STANDARDS

- R9-3-801. General.
- R9-3-802. Standards of performance for fossil-fuel fired steam generators.
- R9-3-803. Standards of performance for incinerators.
- R9-3-804. Standards of performance for portland cement plants.
- R9-3-805. Standards of performance for nitric acid plants.
- R9-3-806. Standards of performance for sulfuric acid plants.
- R9-3-807. Standards of performance for asphalt concrete plants.
- R9-3-808. Standards of performance for petroleum refineries.
- R9-3-809. Standards of performance for storage vessels for petroleum liquids.
- R9-3-810. Standards of performance for secondary lead smelters.
- R9-3-811. Standards of performance for secondary brass and bronze ingot production plants.
- R9-3-812. Standards of performance for iron and steel plants.
- R9-3-813. Standards of performance for sewage treatment plants.
- R9-3-814. Standards of performance for primary copper smelters.
- R9-3-815. Standards of performance for primary zinc smelters.
- R9-3-816. Standards of performance for primary lead smelters.
- R9-3-817. Standards of performance for primary aluminum reduction plants.
- R9-3-818. Standards of performance for phosphate fertilizer industry: wet process phosphoric acid plants.
- R9-3-819. Standards of performance for phosphate fertilizer industry: superphosphoric acid plants.
- R9-3-820. Standards of performance for phosphate fertilizer industry: diammonium phosphate plants.
- R9-3-821. Standards of performance for phosphate fertilizer industry: triple superphosphate plants.
- R9-3-822. Standards of performance for phosphate fertilizer industry: granular triple superphosphate storage facilities.
- R9-3-823. Standards of performance for coal preparation plants.

- R9-3-824. Standards of performance for ferroalloy production facilities.
- R9-3-825. Standards of performance for steel plants: electric arc furnaces.
- R9-3-826. Standards of performance for kraft pulp mills.
- R9-3-827. Reserved.
- R9-3-828. Standards of performance for grain elevators.
- R9-3-829. Reserved.
- R9-3-830. Reserved.
- R9-3-831. Reserved.
- R9-3-832. Standards of performance for lime manufacturing plants.

#### ARTICLE 9. HAZARDOUS AIR POLLUTANT STANDARDS

- R9-3-901. General.
- R9-3-902. Emission standard for asbestos.
- R9-3-903. Emission standard for beryllium.
- R9-3-904. Emission standard for beryllium rocket motor firing.
- R9-3-905. Emission standard for mercury.
- R9-3-906. Emission standard for vinyl chloride.

#### ARTICLE 10. MOTOR VEHICLES; COMBUSTION ENGINES; FUEL

NO CHANGE

#### ARTICLE 11. JURISDICTION AND AUTHORITY

- R9-3-1101. Jurisdiction.
- R9-3-1102. Special inspection warrants.

#### APPENDICES

- Appendix 1 - no change.
- Appendix 2 - no change.
- Appendix 3 - Reserved. (Repealed)
- Appendix 4 - no change.
- Appendix 5 - no change.
- Appendix 6 - Reserved. (Repealed)
- Appendix 7 - no change.
- Appendix 8 - no change.
- Appendix 9 - Monitoring Requirements.
- Appendix 10 - Evaluation of Air Quality Data.
- Appendix 11 - Allowable Particulate Emissions Computations

DIRECTOR OF THE DEPARTMENT OF HEALTH SERVICES

Order of Rule Adoption

Pursuant to A.R.S. § 36-1707, the Director of the Department of Health Services hereby adopts the following rule:

CHAPTER 3

AMENDMENTS TO

RULES AND REGULATIONS

FOR

AIR POLLUTION CONTROL

1 Part 1. Articles #1, #2, #3, #4, #5, #6, #7, #8, #9, #11, and #12, and  
2 Appendix 3 and Appendix 6, of Chapter #3, Title #9, are repealed and new  
3 Articles #1, #2, #3, #4, #5, #6, #7, #8, #9, and #11, and Appendix 9,  
4 Appendix 10, and Appendix 11 are adopted as follows:

5

6

ARTICLE 1. DEFINITIONS

7

8 R9-3-01. Reserved

9 Thru

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11 R9-3-100. Reserved

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13

14 R9-3-101. Definitions

15 A. In these rules and regulations the following definitions in this

1 section shall govern, unless the context otherwise requires, and unless  
2 in conflict with a definition given in Article 8, New Source Performance  
3 Standards, or in Article 9, Hazardous Air Pollutant Standards. In such  
4 case, the definitions given in Articles 8 or 9 shall apply only to sources  
5 covered by those Articles, and the definitions given in this section shall  
6 govern elsewhere.

7 1. "Acid mist" means sulfuric acid mist as measured by Method 8 in  
8 the Arizona Stack Testing Manual.

9 2. "Act" means the Clean Air Act, 42 U.S.C.A. § 7401 et seq.

10 3. "Administrator" means the Administrator of the United States  
11 Environmental Protection Agency.

12 4. "Affected facility" means, with reference to a stationary source,  
13 any apparatus to which a standard is applicable.

14 5. "Air pollution control equipment" means equipment used to eli-  
15 minate, reduce or control the discharge of air contaminants into the  
16 ambient air.

17 6. "Air quality control region" means an area so designated by the  
18 Administrator of the United States Environmental Protection Agency pur-  
19 suant to Section 107 of the Federal Clean Air Act as amended, and includes:

20 a. Phoenix-Tucson Intrastate Air Quality Control Region which  
21 encompasses the counties of Gila, Maricopa, Pima, Pinal and Santa Cruz in  
22 Arizona.

23 b. Clark-Mohave Interstate Air Quality Control Region which encom-  
24 passes Clark County in Nevada and the counties of Mohave and Yuma in  
25 Arizona.

26 c. Arizona-New Mexico Southern Border Interstate Air Quality Control

1 Region which encompasses the counties of Cochise, Graham and Greenlee in  
2 Arizona and the counties of Grant, Hidalgo and Luna in New Mexico.

3 d. Four Corners Interstate Air Quality Control Region which encom-  
4 passes the counties of Apache, Coconino, Navajo and Yavapai in Arizona;  
5 the counties Archuleta, Dolores, La Plata, Montezuma, and San Juan in  
6 Colorado; all of San Juan County and portions of the counties of Rio  
7 Arriba, Sandoval, McKinley and Valencia in New Mexico; the counties of  
8 Emery, Garfield, Grand, Iron, Kane, San Juan, Washington and Wayne in  
9 Utah.

10 7. "Allowable emissions" means the most stringent of the following:

11 a. The applicable new source performance standards or existing  
12 source performance standards, or

13 b. The emission rate agreed to by the source as a permit condition.

14 Allowable emissions shall be calculated at the source's maximum rated  
15 capacity, unless the source is subject to enforceable permit conditions  
16 which limit rate of operation, hours of operation, or the type or amount  
17 of materials combusted or processed.

18 8. "Alternative method" means any method of sampling and analyzing  
19 for an air pollutant which is not a reference or equivalent method but  
20 which has been demonstrated to the Director's satisfaction to, in specific  
21 cases, produce results adequate for the Director's determination of com-  
22 pliance.

23 9. "Ambient air" means that portion of the atmosphere, external to  
24 buildings, to which the general public has access.

25 10. "Architectural coating" means a coating used commercially or  
26 industrially for residential, commercial or industrial buildings and their

1 appurtenances, structural steel and other fabrications such as, but not  
2 limited to, storage, tanks, bridges, beams and girders.

3 11. "Arizona Testing Manual" means the Arizona Testing Manual for  
4 Air Pollutant Emissions.

5 12. "ASME" means American Society of Mechanical Engineers. All  
6 ASME test methods referenced as guides in these rules and regulations  
7 shall be those methods adopted on or before the effective date of this  
8 section.

9 13. "Asphalt concrete plant" means any facility, as described in  
10 R9-3-508, used to manufacture asphalt concrete by heating and drying  
11 aggregate and mixing with asphalt cements.

12 14. "ASTM" means American Society for Testing and Materials. All  
13 ASTM test methods referenced as guides in these rules and regulations  
14 shall be those methods adopted on or before the effective date of this  
15 section.

16 15. "Attainment area" means an area so designated by the Adminis-  
17 trator acting pursuant to Section 107 of the Act as having ambient air  
18 pollutant concentration less than national primary or secondary air  
19 quality standards for a particular pollutant or pollutants.

20 16. "Best available control technology" (BACT) means an emission  
21 limitation based on the maximum reduction of a pollutant subject to these  
22 Rules and Regulations which the Director, on a case-by-case basis, taking  
23 into account energy, environmental and economic impact and other costs,  
24 determines is achievable for a source or facility. If, due to techno-  
25 logical or economic limitations on the application of measurement method-  
26 ology, no emission limit is feasible, the application of BACT can require

1 compliance with design, equipment, work practice or operational standards  
2 or any combination thereof. The degree of emission limitation necessary  
3 to constitute BACT shall not be affected in any manner either by so much  
4 of the stack height of any source as exceeds allowable design criteria  
5 or any other dispersion technique. The preceding sentence shall not  
6 apply with respect to stack heights in existence before the date of  
7 enactment of the Clean Air Act Amendments of 1970 or dispersion tech-  
8 niques implemented before such date. For purposes of BACT allowable  
9 design criteria means the stack height necessary to insure that emissions  
10 from the stack do not result in excessive concentrations of any air  
11 pollutant in the immediate vicinity of the source as a result of atmos-  
12 pheric downwash, eddies and wakes which may be created by the source  
13 itself, nearby structures or nearby terrain obstacles (as determined  
14 by the Director). Such height shall not exceed two and a half times  
15 the height of such source unless the owner of the source demonstrates,  
16 after notice and opportunity for public hearing, to the satisfaction of  
17 the Director, that a greater height is necessary for the reason(s) cited  
18 in the preceding sentence. In no event shall application of BACT result  
19 in emissions of any pollutant, which will exceed the emissions allowed  
20 by any applicable new source performance standard.

21 17. "Black Liquor" means waste liquor from the brown stock washer  
22 and spent cooking liquor which have been concentrated in the multiple  
23 effect evaporator system.

24 18. "Btu" means British thermal unit which is the quantity of  
25 heat required to raise the temperature of one pound of water one degree  
26 Fahrenheit.

1        19. "Bureau" means the Bureau of Air Quality Control within the  
2 Arizona State Department of Health Services.

3        20. "Calcine" means the solid materials produced by a roaster.

4        21. "Calorie" means the quantity of heat required to raise the  
5 temperature of one gram of water one degree Celsius.

6        22. "Capacity factor" means the ratio of the average load on a  
7 machine or equipment for the period of time considered to the capacity  
8 rating of the machine or equipment.

9        23. "Capture system" means the equipment (including ducts, hoods,  
10 fans, dampers, etc.) used to capture or transport particulate matter or  
11 gases generated by a process source to the air pollution control device.

12       24. "Charge" means the addition of metal bearing materials, scrap,  
13 or fluxes to a furnace, converter or refining vessel.

14       25. "Coal" means all solid fossil fuels classified as anthracite,  
15 bituminous, subbituminous, or lignite by ASTM Designation D-388-66.

16       26. "Combustion" means the burning of matter.

17       27. "Commenced" means that an owner or operator has either:

18       a. Begun, or caused to begin, a continuous program of physical  
19 on-site construction of the source, or,

20       b. Entered into binding agreements or contractual obligations which  
21 cannot be cancelled or modified without substantial loss to the owner or  
22 operator, to undertake a program of construction of the source to be  
23 completed within a reasonable time.

24       28. "Condensate stripper system" means a column, and associated  
25 condensers used to strip, with air or steam, TRS compounds from condensate  
26 streams from various processes within a kraft pulp mill.

1        29. "Construction" means replacement, fabrication, erection or  
2 installation of an affected facility.

3        30. "Continuous monitoring system" means the total equipment,  
4 required under the emission monitoring subsections in applicable sections,  
5 used to sample and condition (if applicable), to analyze, and to provide  
6 a permanent record of emission or process parameters.

7        31. "Control device" means the air pollution control equipment used  
8 to remove particulate matter or gases generated by a process source from  
9 the effluent gas stream.

10       32. "Copper concentrate" means enriched copper ore recovered from  
11 the froth flotation process.

12       33. "Copper concentrate dryer" means any facility in which a copper  
13 sulfide ore concentrate charge is heated in the presence of air to eliminate  
14 a portion of the moisture from the charge, provided less than five (5)  
15 percent of the sulfur contained in the charge is eliminated in the facility.

16       34. "Copper concentrate roaster" means any facility in which a  
17 copper sulfide ore concentrate is heated in the presence of air to eli-  
18 minate a significant portion (five percent or more) of the sulfur con-  
19 tained in the charge.

20       35. "Copper converter" means any vessel to which copper matte is  
21 charged and oxidized to copper.

22       36. "Copper matte" means a metallic sulfide made by melting the  
23 roasted product of copper sulfide ores.

24       37. "Copper reverberatory smelting furnace" means any vessel in  
25 which the smelting of copper sulfide ore concentrates or calcines is  
26 performed and in which the heat necessary for smelting is provided pri-

- 1 marily by combustion of a fossil fuel.
- 2 38. "Copper smelting" means processing techniques for the smelting  
3 of a copper sulfide ore concentrate or calcine charge leading to the  
4 formation of separate layers of molten slag, molten copper, and/or copper  
5 matte.
- 6 39. "Copper smelting furnace" means any vessel in which the smelting  
7 of copper sulfide ore concentrates or calcines is performed and in which  
8 the heat necessary for smelting is provided by an electric current, rapid  
9 oxidation of a portion of the sulfur contained in the concentrate as it  
10 passes through an oxidizing atmosphere, or the combustion of a fossil  
11 fuel.
- 12 40. "Department" means the Department of Health Services.
- 13 41. "Director" means the Director of the Department of Health Services.
- 14 42. "Discharge" means the release, escape or emission of an effluent  
15 into the atmosphere.
- 16 43. "Dust" means finely divided solid particulate matter occurring  
17 naturally or created by mechanical processing, handling or storage of  
18 materials in the solid state.
- 19 44. "Dust suppressant" means a chemical compound or mixture of  
20 chemical compounds added with or without water to a dust source for pur-  
21 poses of preventing air entrainment.
- 22 45. "Effluent" means any air contaminant which is emitted and subse-  
23 quently escapes into the atmosphere.
- 24 46. "Emission" means the act of passing into the atmosphere an air  
25 contaminant or a gas stream, visible or invisible.
- 26 47. "Emission point" means the location (place in horizontal plane

1 and vertical elevation) at which an emission enters the atmosphere.

2 48. "Emission standard" means a regulation (or portion thereof)  
3 setting forth an allowable rate of emissions, level of opacity, or  
4 prescribing equipment or fuel specifications that result in control of  
5 air pollution emissions.

6 49. "Equivalent method" means any method of sampling and analyzing  
7 for an air pollutant which has been demonstrated to the Director's  
8 satisfaction to have a consistent and quantitatively known relationship  
9 to the reference method, under specified conditions.

10 50. "Excess emissions" means emissions of an air pollutant in  
11 excess of an emission standard.

12 51. "Existing source" means any source which commenced replacement,  
13 erection, installation or making a major alteration of the type des-  
14 cribed in R9-3-301 (installation permit) prior to the effective date of  
15 these Rules and Regulations.

16 52. "Existing source performance standards" means emission limita-  
17 tions or other performance requirements for stationary sources, the  
18 replacement, erection, installation or major alteration of which is  
19 commenced prior to the effective date of the regulations as prescribed  
20 by Article 5 of this chapter (existing stationary point source perfor-  
21 mance standards).

22 53. "Facility" means an identifiable piece of stationary process  
23 equipment and all associated equipment. A stationary source is composed  
24 of one or more pollutant-emitting facilities.

25 54. "Fossil fuel-fired steam generator" means a furnace or boiler  
26 used in the process of burning fossil fuel for the primary purpose of

producing steam by heat transfer.

55. "Fuel" means any material which is burned for the purpose of producing energy.

56. "Fugitive dust" means naturally occurring particulates uncontaminated by pollutants resulting from industrial activity. Fugitive dust may include emissions from unpaved roads, paved roads, tilled farm land, exposed surface areas, arid lands, sparsely vegetated lands, unimproved lands, land reclamation, construction sites, mining activities associated with overburden removal, blasting, haul road truck transport and native soil which becomes airborne from any other source.

57. "Fugitive emissions" means emissions not vented to the atmosphere through a stack or stacks.

58. "Fume" means solid particulate matter resulting from the condensation and subsequent solidification of vapors of melted solid materials.

59. "Gasoline" means any petroleum distillate having a Reid vapor pressure of four (4) pounds or more.

60. "Ground cover" means the area covered by the combined aerial parts of plants and naturally occurring mulches expressed as a percentage of the total area of measurement.

61. "Hazardous air pollutant" means an air pollutant to which no Arizona ambient air quality standard is applicable and which in the judgment of the Director causes, or contributes to, air pollution which may reasonably be anticipated to result in an increase in mortality or an increase in serious irreversible, or incapacitating reversible, illness.

62. "Hearing Board" means the State Air Pollution Control Hearing

1 Board.

2 63. "Heat input" means the quantity of heat in terms of Btu's  
3 generated by fuels fed into the fuel burning equipment under conditions  
4 of complete combustion.

5 64. "High terrain" means any area having an elevation of nine  
6 hundred (900) feet or more above the base of the stack of a facility.

7 65. "Incinerator" means any equipment, machine, device, contrivance  
8 or other article and all appurtenances thereof used for the combustion  
9 of refuse, salvage materials or any other combustible material except  
10 fossil fuels. Such combustion shall be for the purpose of reducing the  
11 volume of material.

12 a. Multiple chamber incinerator: A multiple chamber incinerator  
13 consists of three or more refractory-lined combustion chambers in series,  
14 physically separated by refractory walls and interconnected by gas passage  
15 ports or ducts.

16 b. Controlled atmosphere incinerator: A controlled atmosphere  
17 incinerator consists of one or more refractory-lined chambers in which  
18 complete combustion is promoted by recirculation of gases by mechanical  
19 means.

20 c. Wood waste burner: A wood waste burner is an incinerator de-  
21 signed and used exclusively for the burning of wood wastes consisting of  
22 wood slabs, scraps, shavings, barks, sawdust or other wood material.  
23 Generation of steam as a by-product shall not affect the classification  
24 of the device as an incinerator.

25 d. Air curtain destructor: An air curtain destructor is an incin-  
26 eration device designed and used to secure, by means of a fan generated

1 air curtain, controlled combustion of only wood waste and slash materials  
2 in an earthen trench or refractory-lined pit or bin.

3 e. Afterburner: An afterburner is an incinerator installed in the  
4 secondary combustion chamber or stack for the purpose of incinerating  
5 smoke, fumes, gases, unburned carbon, and other combustible material not  
6 consumed during primary combustion.

7 f. Fume incinerator: A fume incinerator is a device similar to an  
8 afterburner installed for the purpose of incinerating fumes, gases and  
9 other finely divided combustible particulate matter not previously  
10 burned.

11 66. "Isokinetic sampling" means sampling in which the linear  
12 velocity of the gas entering the sampling nozzle is equal to that of the  
13 undisturbed gas stream at the sample point.

14 67. "Kraft pulp mill" means any stationary source which produces  
15 pulp from wood by cooking (digesting) wood chips in a water solution  
16 of sodium hydroxide and sodium sulfide (white liquor) at high temperature  
17 and pressure. Regeneration of the cooking chemicals through a recovery  
18 process is also considered part of the kraft pulp mill.

19 68. "Kraft pulp mill digester system" means each continuous di-  
20 gester or each batch digester used for the cooking of wood in the white  
21 liquor, and associated flash tank(s), blow tank(s), chip streamer(s),  
22 and condenser(s).

23 69. "Lead" means elemental lead or alloys in which the predominant  
24 component is lead.

25 70. "Lime hydrator" means a unit used to produce hydrated lime  
26 product.

1        71. "Lime kiln" means a unit used to calcine lime rock or kraft  
2 pulp mill lime mud which consists primarily of calcium carbonate, into  
3 quicklime, which is calcium oxide.

4        72. "Lime manufacturing plant" includes any plant which produces a  
5 lime product from limestone by calcination. Hydration of the lime pro-  
6 duct is also considered to be part of the source.

7        73. "Lime product" means the product produced by the calcination  
8 process including, but not limited to, calcitic lime, dolomitic lime,  
9 and deadburned dolomite.

10       74. "Lowest achievable emission rate" (LAER) means an emission  
11 limitation based on the maximum reduction of a pollutant subject to  
12 these Rules and Regulations which the Director, on a case-by-case basis,  
13 taking into account energy, environmental and economic impact and other  
14 costs, determines is achievable for a source or facility. If, due to  
15 technological or economic limitations on the application of measurement  
16 methodology, no emission limit is feasible, the application of LAER can  
17 require compliance with design, equipment, work practice or operational  
18 standards or any combination thereof. The degree of emission limitation  
19 necessary to constitute LAER shall not be affected in any manner either  
20 by so much of the stack height of any source as exceeds allowable de-  
21 sign criteria or any other dispersion technique. The preceding sentence  
22 shall not apply with respect to stack heights in existence before the  
23 date of enactment of the Clean Air Act Amendments of 1970 or dispersion  
24 techniques implemented before such date. For purpose of LAER allowable  
25 design criteria means the stack height necessary to insure that emissions  
26 from the stack do not result in excessive concentration of any air

1 pollutant in the immediate vicinity of the source as a result of atmos-  
2 pheric downwash, eddies and wakes which may be created by the source  
3 itself, nearby structures or nearby terrain obstacles (as determined by  
4 the Director). Such height shall not exceed two and a half times the  
5 height of such source unless the owner of the source demonstrates, after  
6 notice and opportunity for public hearing, to the satisfaction of the  
7 Director, that a greater height is necessary for the reason(s) cited in  
8 the preceding sentence. In no event shall application of LAER result  
9 in emissions of any pollutant, which will exceed the emissions allowed  
10 by the most stringent of the following:

- 11 a. New source performance standards, or
- 12 b. Existing source performance standards, or
- 13 c. The most stringent emission limitation which has been adequately  
14 demonstrated in practice for such class or category of sources or faci-  
15 lities.

16 75. "Major alteration" means any physical change in, or change in  
17 the method of operation of, a source which increases the potential  
18 emission rate of any air pollutant to which a standard under these Rules  
19 and Regulations applies by one hundred (100) tons per year or more,  
20 except that:

- 21 a. Routine maintenance, repair and replacement shall not be con-  
22 sidered a physical change.
- 23 b. The following shall not be considered a change in the method of  
24 operation:
  - 25 i. An increase in production rate, if such increase does not  
26 exceed the operating design capacity of the affected facility;

- 1        ii. An increase in the hours of operation, subject to conditions  
2 contained in the source's operating permit;
- 3        iii. Use of an alternative fuel or raw material by reason of an  
4 order in effect under Section 2(a) and (b) of the Energy Supply and  
5 Environmental Coordination Act of 1974 (15 U.S.C.A. § 792 or any super-  
6 seding legislation), or by reason of a natural gas curtailment plan in  
7 effect pursuant to the Federal Power Act (U.S.C.A. Title 16, Chapter 12);
- 8        iv. Use of an alternative fuel or raw material, if prior to  
9 January 6, 1975, the source was capable of accommodating such fuel or  
10 material;
- 11       v. Use of an alternative fuel by reason of an order or rule under  
12 Section 125 of the Act;
- 13       vi. Change in ownership of the affected facility.
- 14       76. "Major source" means a source which has the potential to emit  
15 more than 100 tons per year of any pollutant subject to this Chapter.
- 16       77. "Malfunction" means any sudden and unavoidable failure of air  
17 pollution control equipment or process equipment or a process to operate  
18 in a normal and usual manner. Failures that are caused by poor main-  
19 tenance, careless operation or any other upset condition or equipment  
20 breakdown which could have been prevented by the exercise of reasonable  
21 care shall not be considered malfunctions.
- 22       78. "Molybdenum roaster" means any facility in which a molybdenum  
23 sulfide ore concentrate charge is heated in the presence of air to  
24 eliminate a significant portion (5 percent or more) of the sulfur contained  
25 in the charge.
- 26       79. "Monitoring device" means the total equipment, required under

1 the monitoring of operations sections in applicable subparts, used to  
2 measure and record (if applicable) process parameters.

3 80. "Motor vehicle" means any self-propelled vehicle designed for  
4 transporting persons or property on public highways.

5 81. "Mulch" means vegetative residues or other suitable materials  
6 that adequately stabilize the soil, provide moisture and climate condi-  
7 tions suitable for germination and growth, and do not interfere with  
8 the postmining use of the land.

9 82. "Multiple-effect evaporator system" means the multiple-effect  
10 evaporators and associated condenser(s) and hotwell(s) used to concen-  
11 trate the spent cooking liquid that is separated from the pulp (black  
12 liquor).

13 83. "Neutral sulfite semichemical pulping operation" means any  
14 operation in which pulp is produced from wood by cooking (digesting)  
15 wood chips in a solution of sodium sulfite and sodium bicarbonate,  
16 followed by mechanical defibrating (grinding).

17 84. "New source" means any major source of air pollution or  
18 potential source of air pollution, the construction of which was  
19 commenced after the effective date of these Rules and Regulations.

20 85. "New source performance standards" means the emission limita-  
21 tions or other performance requirements for stationary sources, the  
22 construction or major alteration of which is commenced after the  
23 effective date of the regulations as prescribed by Article 8 of this  
24 Chapter (New source performance article).

25 86. "Nitric acid plant" means any facility producing nitric acid  
26 30 to 70 percent in strength by either the pressure or atmospheric

1 pressure process.

2 87. "Nitrogen oxides" means all oxides of nitrogen except nitrous  
3 oxide, as measured by test methods set forth in the Arizona Testing  
4 Manual.

5 88. "Nonattainment area" means an area so designated by the Admin-  
6 istrator acting pursuant to Section 107 of the Act (42 U.S.C.A. § 7401)  
7 as exceeding national primary or secondary ambient air standards for a  
8 particular pollutant or pollutants.

9 89. "Non-point source" means a source of air contaminants which  
10 lacks an identifiable plume or emission point.

11 90. "Opacity" means the degree of obscuration of transmitted light.

12 91. "Operation" means any physical or chemical action resulting in  
13 the change in location, form, physical properties or chemical character  
14 of a material.

15 92. "Owner or operator" means any person who owns, leases, operates,  
16 controls, or supervises an affected facility or a stationary source of  
17 which an affected facility is a part.

18 93. "Particulate matter" means any finely divided liquid or solid  
19 material, other than sulfur acid mist aerosols or uncombined water, as  
20 measured by the test methods and procedures described in R9-3-310.

21 94. "Percent opacity" means the degree to which an effluent plume  
22 or other emission obscures the transmission of light.

23 95. "Person" includes any public or private corporation, company,  
24 partnership, firm, association or society of persons, the federal govern-  
25 ment and any of its departments or agencies, the state and any of its  
26 agencies, departments or political subdivisions, as well as a natural

1 person.

2 96. "Petroleum liquids" means petroleum, condensate, and any  
3 finished or intermediate products manufactured in a petroleum refinery  
4 but does not mean Number 2 through Number 6 fuel oils as specified in  
5 ASTM D-396-69, gas turbine fuel oils Numbers 2-GT through 4-GT as  
6 specified in ASTM D-2880-71, or diesel fuel oils Numbers 2-D and 4-D  
7 as specified in ASTM D-975-68.

8 97. "Photochemically reactive solvent" means a solvent with an  
9 aggregate or more than twenty (20) percent of its total volume composed  
10 of the chemical compounds classified below or which exceeds any of the  
11 following percentage composition limitations, referred to the total  
12 volume of solvent:

13 a. A combination of hydrocarbons, alcohols, aldehydes, esters,  
14 ethers, or ketones having an olefinic or cyclo-olefinic type of unsatura-  
15 tion: five (5) percent;

16 b. A combination of aromatic compounds with eight or more carbon  
17 atoms to the molecule except ethylbenzene: eight (8) percent;

18 c. A combination of ethylbenzene, ketones having branched hydro-  
19 carbon structures, trichloroethylene or toluene: twenty(20) percent.

20 Whenever any organic solvent or any constituent of an organic  
21 solvent may be classified from its chemical structure into more than  
22 one of the above groups or organic compounds, it shall be considered  
23 as a member of the most reactive chemical group, that is, that group  
24 having the least allowable percent of the total volume of solvents.

25 98. "Plume" means visible effluent.

26 99. "Potential to emit" means the capability to emit a pollutant

1 in the absence of air pollution control equipment unless such equipment  
2 is necessary for the source to produce its normal product or is integral  
3 to the normal operation of the source. Potential emissions shall be  
4 determined at the source's maximum annual rated capacity, unless the  
5 source is subject to permit conditions limiting the rate of operation,  
6 hours of operation or the type or amount of material combusted or  
7 processed.

8 100. "Process" means one or more operations, including equipment  
9 and technology, used in the production of goods or services or the  
10 control of by-products or waste.

11 101. "Process source" means the last operation or process which  
12 produces an air contaminant resulting from (a) the separation of the  
13 air contaminants from the process material, or (b) the conversion of  
14 constituents of the process materials into air contaminants and which  
15 is not an air pollution abatement operation.

16 102. "Process weight" means the total weight of all materials  
17 introduced into a process source, including fuels, where these contri-  
18 bute to pollution generated by the process.

19 103. "Process weight rate" means a rate established as follows:

20 a. For continuous or long run, steady-state process sources, the  
21 total process weight for the entire period of continuous operation or  
22 for a typical portion thereof, divided by the number of hours of such  
23 period or portion thereof.

24 b. For cyclical or batch process sources, the total process  
25 weight for a period which covers a complete operation or an integral  
26 number of cycles, divided by the hours of actual process operation during

1 such period.

2 104. "Proportional sampling" means sampling at a rate that produces  
3 a constant ratio of sampling rate to stack gas flow rate.

4 105. "Recovery furnace" means the unit used for burning black liquor  
5 to recover chemicals consisting primarily of sodium carbonate and sodium  
6 sulfide. The recovery furnace includes the direct-contact evaporator for  
7 a conventional furnace. "Old design furnaces" are those without welded  
8 wall construction or emission-control designed air systems. "New design  
9 furnaces" include both welded wall construction and emission-control  
10 design air systems. "Cross recovery furnaces" burn combined neutral  
11 sulfite waste liquor and black liquor.

12 106. "Reference method" means any method of sampling and analyzing  
13 for an air pollutant as described in the Arizona Testing Manual.

14 107. "Reid vapor pressure" is the absolute vapor pressure of  
15 volatile crude oil and volatile non-viscous petroleum liquids, except  
16 liquified petroleum gases, as determined by ASTM-D-323-59 (reapproved  
17 1968).

18 108. "Rotary lime kiln" means a unit with an included rotary drum  
19 which is used to produce a lime product from limestone by calcination.

20 109. "Run" means the net period of time during which an emission  
21 sample is collected. Unless otherwise specified, a run may be either  
22 intermittent or continuous within the limits of good engineering practice.

23 110. "Shutdown" means the cessation of operation of any air pollu-  
24 tion control equipment or process equipment for any purpose, except  
25 routine phasing out of process equipment.

26 111. "Slag" means the more or less completely fused and vitrified

1 matter separated during the reduction of a metal from its ore.

2 112. "Smelt dissolving tank" means a vessel used for dissolving  
3 the smelt collected from the kraft mill recovery furnace.

4 113. "Smelter feed" means all materials utilized in the operation  
5 of a copper smelter including metals or concentrates, fuels and chemical  
6 reagents and shall be calculated as the aggregate sulfur content of all  
7 fuels and other feed materials whose products of combustion and gaseous  
8 by-products are emitted to the atmosphere.

9 114. "Smoke" means particulate matter resulting from incomplete  
10 combustion.

11 115. "Soot" means the carbonaceous particulate product of incomplete  
12 combustion which may be a component of smoke.

13 116. "Source" means any equipment, machine, incinerator, structure,  
14 building, device or other article (or combination thereof) which is  
15 located on one or more contiguous properties and which is owned or  
16 operated by the same person (or by persons under common control) and  
17 which emits or may emit an air pollutant. The following are not con-  
18 sidered sources for purposes of these regulations:

19 a. Motor vehicles

20 b. Fuel burning equipment which, in the aggregate with such other  
21 equipment of the applicant at the same location or property, is rated  
22 at less than 500,000 Btu's per hour.

23 c. Agricultural vehicles or agricultural equipment used in normal  
24 farm operations.

25 117. "Standard" means a standard of performance promulgated under  
26 these Rules and Regulations.

1        118. "Standard conditions" means a temperature of 293K (68°F or 20°C)  
2 and a pressure of 101.3 kilopascals (29.92 in. Hg or 1013.25mb).

3        119. "Start-up" means the setting into operation of any air pollution  
4 control equipment or process equipment for any purpose except routine  
5 phasing in of process equipment.

6        120. "Stationary rotating machinery" means any gas engine, diesel  
7 engine, gas turbine, or oil fired turbine operated from a stationary  
8 mounting and used for the production of electric power or for the direct  
9 drive of other equipment.

10       121. "Stationary source" means any structure, building, facility,  
11 equipment, installation or operation (or combination thereof) which is  
12 located on one or more contiguous or adjacent properties and which is  
13 owned or operated by the same person (or by persons under common control)  
14 and which emits or may emit an air pollutant.

15       122. "Sulfuric acid plant" means any facility producing sulfuric  
16 acid by the contact process by burning elemental sulfur, alkylation acid,  
17 hydrogen sulfide, or acid sludge, but does not include facilities where  
18 conversion to sulfuric acid is utilized as a means of preventing emissions  
19 of sulfur dioxide or other sulfur compounds to the atmosphere.

20       123. "Supplementary control system" (SCS) means a system by which  
21 sulfur dioxide emissions are curtailed during periods when meteorological  
22 conditions conducive to ground-level concentrations in excess of ambient  
23 air quality standards for sulfur dioxide either exist or are anticipated.

24       124. "Total reduced sulfur (TRS) means the sum of the sulfur com-  
25 pounds, primarily hydrogen sulfide, methyl mercaptan, dimethyl sulfide,  
26 and dimethyl disulfide, that are released during the kraft pulping opera-

1 tion and measured by Method 16 in the Arizona Testing Manual.

2 125. "Urban or suburban open area" means an unsubdivided tract of  
3 land surrounding a substantial urban development of a residential, indus-  
4 trial, or commercial nature and which, though near or within the limits  
5 of some city or town, may be used for agriculture, be uncultivated, or  
6 lie fallow.

7 126. "Vacant lot" means a subdivided residential or commercial lot  
8 which contains no buildings or structures of a temporary or permanent  
9 nature.

10 127. "Vapor" means the gaseous form of a substance normally occur-  
11 ing in a liquid or solid state.

12 128. "Vapor pressure" means the pressure exerted by the gaseous  
13 form of a substance in equilibrium with its liquid or solid form.

14 129. "Visible emissions" means any emissions which are visually  
15 detectable without the aid of instruments and which contain particulate  
16 matter.

17 130. "Volatile organic compound" means any organic compound that,  
18 when released into the atmosphere, can remain long enough to participate  
19 in photochemical reactions.

20 131. "Volatility" means the capability of a substance to vaporize  
21 or change to the vapor form.

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1 ARTICLE 2. AMBIENT AIR QUALITY STANDARDS

2 R9-3-201. Non-specific particulates

3 A. The maximum allowable annual geometric mean for non-specific particu-  
4 lates shall be 75 micrograms per cubic meter.

5 B. The maximum allowable 24-hour concentration for non-specific particu-  
6 lates shall be 150 micrograms per cubic meter. This concentration shall not  
7 be exceeded more than once per year at any one location.

8 C. Particulates concentrations shall be measured by the reference method  
9 described in Appendix B to Title 40, Part 50 of the Code of Federal Regulations  
10 (1977), or by one of the following:

11 1. A method of measurement that has been designated prior to the effective  
12 date of this regulation, as a reference or equivalent method by the Administrator  
13 acting pursuant to Title 40, Part 53 of the Code of Federal Regulations (1977).

14 2. A method of measurement that, though not designated as a reference or  
15 equivalent method, has been approved for use prior to the effective date of this  
16 regulation, by the Administrator acting pursuant to Title 40, Part 51, Section  
17 51.17a of the Code of Federal Regulations (1977). Such method shall be subject  
18 to any restrictions placed on its use by the Administrator.

19  
20  
21 R9-3-202. Sulfur dioxide

22 A. The maximum allowable annual arithmetic mean shall be 80 micrograms per  
23 cubic meter.

24 B. The maximum allowable 24-hour concentration for sulfur dioxide shall  
25 be 365 micrograms per cubic meter. This concentration shall not be exceeded  
26 more than once per year at any one location.

1 C. The maximum allowable 3-hour concentration for sulfur dioxide shall be  
2 1300 micrograms per cubic meter. This concentration shall not be exceeded more  
3 than once per year at any one location.

4 D. Sulfur dioxide concentrations shall be measured by the reference  
5 method described in Appendix A to Title 40, Part 50 of the Code of Federal  
6 Regulations (1977), or a method of measurement that, though not designated as  
7 a reference or equivalent method, has been approved for use prior to the effec-  
8 tive date of this regulation, by the Administrator acting pursuant to Title 40,  
9 Part 51, Section 51.17a of the Code of Federal Regulations (1977). Such  
10 method shall be subject to any restrictions placed on its use by the Administra-  
11 tor.

12 E. An analyzer purchased prior to February 18, 1976 may be used through  
13 February 18, 1980.

14  
15  
16 R9-3-203. Non-methane hydrocarbons

17 A. The maximum allowable 3-hour concentration (6 to 9 a.m.) for non-methane  
18 hydrocarbons shall be 160 micrograms per cubic meter. This concentration shall  
19 not be exceeded more than once per year at any one location.

20 B. Non-methane hydrocarbons concentrations shall be measured by the refer-  
21 ence method described in Appendix E to Title 40, Part 50 of the Code of Federal  
22 Regulations (1977), or by one of the following:

23 1. A method of measurement that has been designated, prior to the effective  
24 date of this regulation, as a reference or equivalent method by the Administrator  
25 acting pursuant to Title 40, Part 53 of the Code of Federal Regulations (1977).

26 2. A method of measurement that, though not designated as a reference or

1 equivalent method, has been approved for use prior to the effective date of  
2 this regulation, by the Administrator acting pursuant to Title 40, Part 51,  
3 Section 51.17a of the Code of Federal Regulations (1977). Such method shall  
4 be subject to any restrictions placed on its use by the Administrator.  
5  
6

7 R9-3-204. Photochemical oxidants

8 A. The maximum allowable 1-hour concentration for photochemical oxidants  
9 shall be 160 micrograms per cubic meter. This concentration shall not be ex-  
10 ceeded more than once per year at any one location.

11 B. Photochemical oxidants concentrations shall be measured by the refer-  
12 ence method described in Appendix D to Title 40, Part 50 of the Code of Federal  
13 Regulations (1977), or by one of the following:

14 1. A method of measurement that has been designated, prior to the  
15 effective date of this regulation, as a reference or equivalent method by the  
16 Administrator acting pursuant to Title 40, Part 53 of the Code of Federal  
17 Regulations (1977).

18 2. A method of measurement that, though not designated as a reference or  
19 equivalent method, has been approved for use prior to the effective date of this  
20 regulation, by the Administrator acting pursuant to Title 40, Part 51, Section  
21 51.17a of the Code of Federal Regulations (1977). Such method shall be subject  
22 to any restrictions placed on its use by the Administrator.

23 3. An analyzer purchased prior to February 18, 1976 may be used through  
24 February 18, 1980.  
25  
26

1 R9-3-205. Carbon monoxide

2 A. The maximum allowable 1-hour concentration shall be 40 milligrams per  
3 cubic meter. This concentration shall not be exceeded more than once per year  
4 at any one location.

5 B. The maximum allowable 8-hour concentration shall be 10 milligrams per  
6 cubic meter. This concentration shall not be exceeded more than once per year  
7 at any one location.

8 C. Carbon monoxide concentrations shall be measured by the reference  
9 method described in Appendix C to Title 40, Part 50 of the Code of Federal  
10 Regulations (1977), or by one of the following:

11 1. A method of measurement that has been designated, prior to the effec-  
12 tive date of this regulation, as a reference or equivalent method by the Admin-  
13 istrator acting pursuant to Title 40, Part 53 of the Code of Federal Regulations  
14 (1977).

15 2. A method of measurement that, though not designated as a reference or  
16 equivalent method, has been approved for use prior to the effective date of  
17 this regulation, by the Administrator acting pursuant to Title 40, Part 51,  
18 Section 51.17a of the Code of Federal Regulations (1977). Such method shall  
19 be subject to any restrictions placed on its use by the Administrator.

20 3. An analyzer purchased prior to February 18, 1976 may be used through  
21 February 18, 1980.

22  
23  
24 R9-3-206. Nitrogen dioxide

25 A. The maximum allowable annual arithmetic mean for nitrogen dioxide shall  
26 be 100 micrograms per cubic meter.

1           B. Nitrogen dioxide concentrations shall be measured by the reference  
2 method described in Appendix F to Title 40, Part 50 of the Code of Federal  
3 Regulations (1977), or by one of the following:

4           1. A method of measurement that has been designated, prior to the effec-  
5 tive date of this regulation, as a reference or equivalent method by the  
6 Administrator acting pursuant to Title 40, Part 53 of the Code of Federal  
7 Regulations (1977).

8           2. A method of measurement that, though not designated as a reference or  
9 equivalent method, has been approved for use prior to the effective date of  
10 this regulation, by the Administrator acting pursuant to Title 40, Section  
11 51.17a of the Code of Federal Regulations (1977). Such method shall be sub-  
12 ject to any restrictions placed on its use by the Administrator.

13           3. An analyzer purchased prior to January 3, 1978 may be used through  
14 January 3, 1980.

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17 R9-3-207. Reserved

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20 R9-3-208. Reserved

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23 R9-3-209. Reserved

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26 R9-3-210. Reserved

1 R9-3-211. Reserved

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4 R9-3-212. Reserved

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7 R9-3-213. Reserved

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10 R9-3-214. Reserved

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13 R9-3-215. Reserved

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16 R9-3-216. Evaluation of air quality data

17 The evaluation of air quality data in terms of procedure, methodology, and  
18 concept is to be consistent with methods described in Appendix 10.

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21 R9-3-217. Attainment areas; classification and standards

22 A. Designation and classification of attainment areas.

23 1. All attainment areas or parts thereof shall be classified as either  
24 Class I, Class II or Class III.

25 2. All of the following areas which were in existence on August 7, 1977,  
26 shall be Class I areas irrespective of attainment status and may not be

1 redesignated:

- 2 a. International parks;
- 3 b. National wilderness areas which exceed 5,000 acres in size;
- 4 c. National memorial parks which exceed 5,000 acres in size; and
- 5 d. National parks which exceed 6,000 acres in size.

6 3. The following areas may be designated only as Class I or II:

- 7 a. An area which as of August 7, 1977, exceeds 10,000 acres in size and
- 8 is a national monument, a national primitive area, a national preserve, a
- 9 national recreational area, a national wild and scenic river, a national wild-
- 10 life refuge, a national lakeshore or seashore.
- 11 b. A national park or national wilderness area established after August 7,
- 12 1977, which exceeds 10,000 acres in size.

13 4. All other areas shall be Class II areas unless redesignated under

14 subparagraph 5 or 6.

15 5. The Governor or his designee may redesignate areas of the state Class

16 I or Class II, provided that:

- 17 a. At least one public hearing is held in or near the area affected;
- 18 b. Other states, Indian governing bodies and Federal Land Managers, whose
- 19 land may be affected by the proposed redesignation are notified at least 30
- 20 days prior to the public hearing.
- 21 c. A discussion of the reasons for the proposed redesignation including
- 22 a description and analysis of health, environmental, economic, social and
- 23 energy effects of the proposed redesignation is prepared by the Governor or
- 24 his designees and is made available for public inspection at least 30 days prior
- 25 to the hearing and the notice announcing the hearing contains appropriate noti-
- 26 fication of the availability of such discussion.

1           d. In redesignating any area under this section with respect to which  
2 any Federal Land Manager has submitted written comments and recommendations,  
3 the Governor or his designee shall publish a list of any inconsistency  
4 between such redesignation and such recommendations, together with the reasons  
5 for making such redesignation against the recommendation of the Federal Land  
6 Manager.

7           e. The proposed redesignation is based on the record which must reflect  
8 the basis for the proposed redesignation, including consideration of (i)  
9 growth anticipated in the area, (ii) the social, environmental, health, energy  
10 and economic effects of such redesignation and upon other areas and states,  
11 (iii) any impacts of such proposed redesignation upon regional or national  
12 interests, and (iv) testimony submitted at the public hearing.

13           f. The redesignation is proposed after consultation with the elected  
14 leadership of local and other substate general purpose governments in the area  
15 covered by the proposed redesignation.

16           6. The Governor or his designee may redesignate areas of the State Class  
17 III if:

18           a. Such redesignation meets the requirements of paragraph 5. of this  
19 section;

20           b. Such redesignation has been approved after consultation with the  
21 appropriate committee of the legislature if it is in session or with the  
22 leadership of the legislature if it is not in session, and if the general pur-  
23 pose units of local government representing a majority of the residents of the  
24 area so redesignated concur in the redesignation;

25           c. Such redesignation will not cause, or contribute to, concentration of  
26 any air pollutant which exceeds any maximum allowable increase or maximum

allowable concentration permitted under the classification of any area;

d. Prior to any public hearing on redesignation of any area, there shall be available insofar as is practicable for public inspection any specific plans for any new major stationary source or modification of such source which may be permitted to be constructed and operated only if the area in question is redesignated as Class III.

B. Limitation of pollutants in classified attainment areas.

1. Areas designated as Class I, II, or III shall be limited to the following increases in air pollutant concentrations occurring over the baseline concentration; provided that for any period other than an annual period, the applicable maximum allowable increase may be exceeded once per year at any one location.

CLASS I

Maximum Allowable Increase  
(Micrograms per cubic meter)

Particulate matter:

Annual geometric mean	5
24-hour maximum	10

Sulfur dioxide:

Annual arithmetic mean	2
24-hour maximum	5
3-hour maximum	25

CLASS II

Particulate matter:

Annual geometric mean	19
24-hour maximum	37

1 Sulfur dioxide:

2 Annual arithmetic mean	20
3 24-hour maximum	91
4 3-hour maximum	512

5 CLASS III

6 Particulate matter:

7 Annual geometric mean	37
8 24-hour maximum	75

9 Sulfur dioxide:

10 Annual arithmetic mean	40
11 24-hour maximum	182
12 3-hour maximum	700

13 2. The maximum allowable concentration of any air pollutant in any area  
14 to which the preceding paragraph applies shall not exceed a concentration for  
15 each pollutant or exposure equal to the concentration permitted under the Arizona  
16 State Ambient Air Quality Standards contained in this Article (Article 2).

17 3. Exceptions to be considered:

18 a. For purposes of determining compliance with the maximum allowable  
19 increases in ambient concentrations of an air pollutant, the following concen-  
20 trations of such pollutant shall not be taken into account:

21 i. Concentration of such pollutant attributable to the increase in  
22 emissions from stationary sources which have converted from the use of petroleum  
23 products, or natural gas, or both, by reason of natural gas curtailment order  
24 which is in effect under the provisions of Sections 2 (a) and (b) of the  
25 Energy Supply and Environmental Coordination Act of 1974 (15 U.S.C.A. § 792)  
26 (or any subsequent legislation which supersedes such provisions) over the

1 emissions from such sources before the effective date of such order.

2 ii. The concentration of such pollutants attributable to the increase in  
3 emissions from stationary sources which have converted from using natural gas  
4 by reason of a natural gas curtailment plan in effect pursuant to the Federal  
5 Power Act (U.S.C.A., Title 16, Chapter 12) over the emissions from such sources  
6 before the effective date of such plan;

7 iii. Concentrations of particulate matter attributable to the increase  
8 in emissions from construction or other temporary activities; and

9 iv. The increase in concentrations attributable to new sources outside  
10 the United States over the concentrations attributable to existing sources  
11 which are included in the baseline concentration.

12 b. No action taken with respect to a source under Paragraph 3. (a) (i) or  
13 (ii) shall apply more than five years after the effective date of the order or  
14 plan referred to.

15 4. For the purposes of this section, "Baseline concentration" means, with  
16 respect to a particular pollutant, the ambient concentration levels of that  
17 pollutant which exists at the time of the first application for an installation  
18 permit issued pursuant to R9-3-304. in an attainment area, based on State air  
19 quality data and on such monitoring data as the permit applicant is required  
20 to submit. Such ambient concentration levels shall take into account all pro-  
21 jected emissions in, or which may affect, such area from any major source on  
22 which construction or a major alteration commenced prior to January 6, 1975,  
23 but which has not begun operation by the date of the baseline air quality  
24 concentration determination. Emissions of sulfur dioxide and particulate  
25 matter from any major source or as the result of any major alteration on which  
26 construction commenced after January 6, 1975, shall not be included in the

1 baseline and shall be counted against the maximum allowable increases in  
2 pollutant concentration established under this section.

3  
4  
5 R9-3-218. Violations

6 A. Any person who causes, suffers, allows or permits the emission into  
7 the ambient air of any substance which causes a measured concentration of air  
8 contaminants in excess of the ambient air quality standards set forth in this  
9 Article shall be guilty of violating these regulations.

10 B. Ambient air quality violations measured at different locations but  
11 during the same time period shall constitute separate violations.

12  
13  
14 R9-3-219. Air pollution emergency episodes

15 A. Procedures shall be implemented by the Director in order to prevent  
16 the occurrence of ambient air pollutant concentrations which would cause sig-  
17 nificant harm to the health of persons. These concentrations are defined as  
18 follows:

<u>Air Pollutant</u>	<u>Averaging Time</u>	<u>Concentration</u>
Sulfur Dioxide	24 hours	2,620 micrograms per cubic meter ( $\text{ug}/\text{m}^3$ )
Total Suspended Particulates	24 hours	$1,000 \text{ ug}/\text{m}^3$
Sulfur Dioxide X Total Suspended Particulates (product of corresponding 24-hour average concentrations of sulfur dioxide and total suspended	24 hours	$490,000 (\text{ug}/\text{m}^3)^2$

1 particulates)

2 Carbon Monoxide	1 hour	144 milligrams per
3		cubic meter (mg/m <sup>3</sup> )
4	4 hours	86.3 mg/m <sup>3</sup>
5	8 hours	57.5 mg/m <sup>3</sup>
6 Photochemical Oxidants	1 hour	1,200 ug/m <sup>3</sup>
7 Nitrogen Dioxide	1 hour	3,750 ug/m <sup>3</sup>
8	24 hours	938 ug/m <sup>3</sup>

9 B. The following stages are identified by air quality criteria in order  
10 to provide for sequential emissions reductions, public notification, and in-  
11 creased Department monitoring and forecast responsibilities. The declaration  
12 of any stage, and the area of the state affected, shall be based on air quality  
13 measurements and meteorological analysis and forecast. The procedures and  
14 actions required for each stage are described in the Department's "Procedures  
15 for Prevention of Emergency Episodes".

16 1. STAGE 1 - ALERT

17 An air pollution alert shall be declared when any of the following air pollutant  
18 concentrations are exceeded at any monitoring site and when meteorological  
19 conditions indicate that there will be a recurrence of alert level concentrations  
20 for the same pollutant(s) during the subsequent 24-hour period:

21 <u>Air Pollutant</u>	<u>Averaging Time</u>	<u>Concentration</u>
22 Sulfur Dioxide	24 hours	800 ug/m <sup>3</sup>
23 Total Suspended Particulates	24 hours	375 ug/m <sup>3</sup>
24 Sulfur Dioxide X Total Suspended	24 hours	65,000 (ug/m <sup>3</sup> ) <sup>2</sup>
25 Particulates (Product of corresponding		
26 24-hour average concentrations of		

1 sulfur dioxide and total suspended  
2 particulates)

3 Carbon Monoxide	8 hours	17 mg/m <sup>3</sup>
4 Photochemical Oxidants	1 hour	400 ug/m <sup>3</sup>
5 Nitrogen Dioxide	1 hour	1,130 ug/m <sup>3</sup>
6	24 hours	282 ug/m <sup>3</sup>

7 If, 48 hours after an alert has been declared, air pollution concentrations and  
8 meteorological conditions do not improve, the warning stage shall be declared  
9 and its control actions implemented.

## 10 2. STAGE II - WARNING

11 An air pollution warning shall be declared when any of the following air pollu-  
12 tant concentrations are measured at any monitoring site and when meteorological  
13 conditions indicate that there will be a recurrence of concentrations of the  
14 same pollutant(s) exceeding the alert level during the subsequent 24-hour  
15 period:

16 <u>Air Pollutant</u>	<u>Averaging Time</u>	<u>Concentrations</u>
17 Sulfur Dioxide	24 hours	1,600 ug/m <sup>3</sup>
18 Total Suspended Particulates	24 hours	625 ug/m <sup>3</sup>
19 Sulfur Dioxide X Total Suspended 20 Particulates (Product of corresponding 21 24-hour average concentrations of 22 sulfur dioxide and total suspended 23 particulates)	24 hours	261,000 (ug/m <sup>3</sup> ) <sup>2</sup>
24 Carbon monoxide	8 hours	34 mg/m <sup>3</sup>
25 Photochemical Oxidants	1 hour	800 ug/m <sup>3</sup>
26 Nitrogen Dioxide	1 hour	2,260 ug/m <sup>3</sup>

24 hours 565 ug/m<sup>3</sup>

If, 48 hours after a warning has been declared, air pollution concentrations and meteorological conditions do not improve, the emergency stage shall be declared and its control actions implemented.

### 3. STAGE III - EMERGENCY

An air pollution emergency shall be declared when any of the following air pollutant concentrations are measured at any monitoring site and when meteorological conditions indicate that there will be a recurrence of concentrations of the same pollutant(s) exceeding the warning level during the subsequent 24-hour period:

<u>Air Pollutant</u>	<u>Averaging Time</u>	<u>Concentration</u>
Sulfur Dioxide	24 hours	2,100 ug/m <sup>3</sup>
Total Suspended Particulates	24 hours	875 ug/m <sup>3</sup>
Sulfur Dioxide X Total Suspended Particulates (Product of corresponding 24-hour average concentrations of sulfur dioxide and total suspended particulates)	24 hours	393,000 (ug/m <sup>3</sup> ) <sup>2</sup>
Carbon Monoxide	8 hours	46 mg/m <sup>3</sup>
Photochemical Oxidants	1 hour	1,000 ug/m <sup>3</sup>
Nitrogen Dioxide	1 hour	3,000 ug/m <sup>3</sup>
	24 hours	750 ug/m <sup>3</sup>

1 ARTICLE 3. PERMITS

2 R9-3-301. Installation permits

3 A. No person shall commence construction or a major alteration of a  
4 major source or equipment, machinery, incinerator, device or other article  
5 which may eliminate, reduce or control the emission of air pollutants with-  
6 out first obtaining an installation permit from the Director.

7 B. There shall be two classes of installation permits:

8 1. Class A permits shall be issued to persons proposing to commence  
9 construction or a major alteration of a major source.

10 2. Class B permits shall be issued to persons proposing solely to  
11 commence construction or an alteration of any equipment, machine, incinerator,  
12 device or other article, the use of which may eliminate, reduce or control  
13 the emission of air pollutants.

14 C. No Class A installation permit shall be issued to a person unless  
15 that person can demonstrate to the Director that the source for which the  
16 permit is sought:

17 1. Will not emit any air pollutants in amounts which will:

18 a. Prevent attainment or maintenance by any other state of any national  
19 primary or secondary ambient air quality standard.

20 b. Interfere with a plan by any other state for the prevention of signi-  
21 ficant deterioration as provided for under the Act.

22 2. For any source construction or making a major alteration to a major  
23 source in an attainment area for any pollutant(s), the source will be in com-  
24 pliance with all provisions of R9-3-304. (PSD section) with regard to such  
25 pollutant(s).

26 3. For any source constructing or making a major alteration to a major

1 source in a nonattainment area for any pollutant(s), the source will be in  
2 compliance with all provisions of R9-3-302. (nonattainment section) with  
3 regard to such pollutant(s).

4 4. Will not exceed the applicable standards for hazardous air pollutants  
5 contained in Article 9. (hazardous air pollutant standards article).

6 5. Will not exceed the limitations, if applicable, on emissions from  
7 non-point sources contained in Article 4.

8 D. The application for a Class A installation permit shall be made on  
9 forms prescribed by the Director, and shall be signed by the applicant. An  
10 application shall contain, at a minimum, the information required by Appendix  
11 1. In addition, the application shall contain such information or data as is  
12 necessary to demonstrate compliance with subsection C. of this section.

13 E. No Class A installation permit shall be issued for the construction  
14 or major alteration of a major source subject to the requirements of R9-3-304.  
15 (PSD section) which may significantly contribute to levels of air pollution  
16 in excess of the national ambient air quality standards in any air quality  
17 control region outside the State unless the person applying for such permit  
18 provides written notice of the permit application to all nearby states the  
19 air pollution levels of which may be affected by such source. Such notice  
20 shall be communicated at least 60 days prior to the date on which commence-  
21 ment of the erection, installation, replacement or major alteration is to be  
22 permitted.

23 F. The application for a Class B installation permit shall be made on  
24 forms prescribed by the Director, and shall be signed by the applicant. An  
25 application shall contain, at a minimum, the information required by Appendix  
26 1.

1           G. The Director shall make available in at least one location in each  
2 air quality control region in which the proposed major source or major alter-  
3 ation would be constructed, a copy of all materials submitted with an applic-  
4 ation for a Class A installation permit and, to the maximum extent practicable,  
5 a copy or summary of all other materials to be considered in making a deter-  
6 mination on the application.

7           H. The Director shall notify the public within five days of receipt of  
8 an application for a Class A installation permit, by advertisement in a news-  
9 paper of general circulation in each air quality control region in which the  
10 proposed major source or major alteration would be constructed, of the appli-  
11 cation. Such notification shall include a summary of the application and a  
12 statement informing the public of the opportunity for written comment and the  
13 time frame, which shall be not less than thirty days, within which comments  
14 are to be submitted.

15           I. A copy of the notice required by subsection H. shall be sent to the  
16 permit applicant and to the officials and agencies having cognizance over the  
17 location where the proposed source or major alteration would occur.

18           J. Within twenty days after receipt of an application for a Class A  
19 installation permit, or any addition to such application, the Director shall  
20 advise the applicant of any deficiency in the application or in the infor-  
21 mation submitted. In the event of such a deficiency, the date of receipt of  
22 the application shall be, for the purpose of this section, the date on which  
23 the Director received all required information.

24           K. The Director may require the applicant to provide additional infor-  
25 mation or to provide and maintain such facilities or perform such air impact  
26 modeling procedures as are necessary to secure information that will disclose

1 the nature, extent, quantity or effects of air contaminants discharged into  
2 the atmosphere from the facility described in the application.

3 L. The Director shall take final action on the application within thirty  
4 days of the proper filing of the completed application. The Director shall  
5 notify the applicant in writing of his approval or denial. Such notification  
6 shall be made available for public inspection in at least one location in the  
7 air quality control region in which the source is located.

8 M. An installation permit shall remain in effect until the operating  
9 permit for such source is granted, the operating permit for a source is  
10 amended to reflect the installation of air pollution control equipment, or  
11 the installation permit is cancelled.

12 N. The Director may cancel an installation permit issued under this  
13 section if the proposed construction or major alteration is not begun within  
14 18 months of issuance, or if during the construction or major alteration,  
15 work is suspended for more than 18 months.

16  
17  
18 R9-3-302. Installation permits in nonattainment areas

19 A. Except as provided in subsections B. through E. below, no Class A  
20 installation permit shall be issued to a person proposing to construct or  
21 make a major alteration to a major source located in a nonattainment area  
22 unless:

23 1. The person demonstrates that the new source or the facility on  
24 which a major alteration has been made will meet an emission limitation  
25 which is lowest achievable emission rate (LAER) for that source or facility.

26 2. The person certifies that all existing major sources owned or

1 operated by that person (or any entity controlling, controlled by, or  
2 under common control with that person) in the State are in compliance with  
3 all conditions contained in the operating permits of each of the sources.

4 3. The person demonstrates that emission reductions from existing  
5 source(s) in the area of the proposed source or major alteration (whether  
6 or not under the same ownership) meet the offset requirements of R9-3-303.  
7 (offset section).

8 B. The requirements of paragraphs A.1 and A.3 shall not apply with respect  
9 to a specified pollutant, if the person applying for an installation  
10 permit under this section can demonstrate that the increase in allowable  
11 emissions of that pollutant from the new source or major alteration would  
12 be less than 50 tons per year, 1,000 pounds per day or 100 pounds per hour,  
13 whichever is more restrictive. In determining whether and to what extent  
14 a major alteration would increase allowable emissions, emission reductions  
15 achieved elsewhere at the source at which the alteration would occur shall  
16 not be taken into account.

17 C. The requirements of paragraph A.3 shall not apply with  
18 respect to emissions of a specified pollutant, if the person applying for  
19 an installation permit under this section can demonstrate that the increase  
20 in allowable emissions of that pollutant from the new source or major  
21 alteration after the imposition of lowest achievable emission rate will be  
22 less than 50 tons per year, 1,000 pounds per day or 100 pounds per hour,  
23 whichever is more restrictive. In determining the increase in allowable  
24 emissions after application of the lowest achievable emission rate, emission  
25 reductions achieved elsewhere at the source at which the alteration would  
26 occur shall not be taken into account.

1 D. The requirements of paragraph A.3. shall not apply to emissions of  
2 a specified pollutant if the person applying for an installation permit under  
3 this section can demonstrate that the emissions of the pollutant are of a  
4 temporary nature including but not limited to those from a pilot plant, a  
5 portable facility, construction, or exploration and notice is given to the  
6 Director at least thirty (30) days prior to relocation of such source identi-  
7 fying the proposed new location and the probable duration of operation at  
8 such location.

9 E. The requirements of paragraph A.3. shall not apply to emissions of  
10 a specified pollutant if the person applying for an installation permit under  
11 this section can demonstrate that emissions of such pollutant from the pro-  
12 posed new or altered source will not exceed the allowance permitted for the  
13 pollutant specified in an applicable growth allowance plan adopted pursuant  
14 to Sections 172 and 173 of the Act.

15  
16  
17 R9-3-303. Offset standards

18 A. Increased emissions by a source subject to this section must be  
19 offset by reduction in the emission of each pollutant for which the area has  
20 been designated as nonattainment by the source itself or by other sources in  
21 the allowable offset area.

22 B. An offset will not be sufficient unless total emissions in the allow-  
23 able offset area after the source commences operation will be less than a  
24 baseline of the total emissions from existing sources allowed under all appli-  
25 cable emissions limitations in effect at the time the application is filed and  
26 such reductions are sufficient to satisfy the Director that the construction

1 of the new source or major alteration together with the offset will result in  
2 a net air quality benefit.

3 C. Baseline further defined:

4 1. For the purpose of this section, the baseline of total emissions  
5 from existing sources will be the emission limitations in effect at the time  
6 the application is filed, including all limitations included as conditions  
7 on permits.

8 2. Where the emission limit allows greater emissions than the potential  
9 emission rate of the source the baseline shall be the potential emissions at  
10 the time the permit request is filed.

11 D. Reduced allowable emissions from a source due to a change to a cleaner  
12 fuel may be used to offset emissions from the new source or major alteration  
13 so long as the change will occur at some future date. A permit issued pur-  
14 suant to this subsection shall be conditioned to require the installation and  
15 use of a specified alternative control measure which will achieve the same  
16 degree of emission reduction should the source switch back to a less clean fuel  
17 at some later date.

18 E. Offsets shall be made on a pounds-per-hour basis when all facilities  
19 involved in the emission offset calculations are operating at their maximum  
20 expected production rate. However, a source may be credited with emission  
21 reductions achieved by the shutdown of a source or the curtailment of production  
22 of a source below that which existed at the time the application was submitted.

23 F. Offset area defined:

24 1. The allowable offset area for the pollutants sulfur dioxide, parti-  
25 culate, and carbon monoxide shall be that area around the new source or altera-  
26 tion within which emission reductions may be made to ensure a positive net air

1 quality benefit. The area shall be determined by atmospheric simulation  
2 modeling. If the emission offsets are obtained from a source on the same  
3 premises or in the immediate vicinity of the new source or major alteration,  
4 and the pollutants disperse from substantially the same effective stack  
5 height, atmospheric simulation modeling shall not be required and the net air  
6 quality benefit shall be assumed.

7 2. The allowable offset area for all other pollutants shall be the  
8 nonattainment area within which the new source or alteration is located.

9 G. An emission reduction may not be used to offset emissions if the  
10 reduced level of emissions is not legally enforceable. It will be considered  
11 legally enforceable if it is included as a condition in the operating permit  
12 issued to the proposed source, or in the case of reductions from sources con-  
13 trolled by the applicant, is included as a condition of the installation permit,  
14 or is adopted as a part of these Rules and Regulations.

15 H. An offset required by this Article may include reductions that result  
16 from State, county, or local measures to reduce emissions from sources in  
17 existence to sufficiently offset emissions from a proposed source and projects  
18 such as paving streets which reduce secondary particulate emissions from such  
19 sources.

20  
21  
22 R9-3-304. Installation permits in attainment areas

23 A. Except as provided in subsections B., C., and D. below, no Class A  
24 installation permit shall be issued to a person proposing to construct or make  
25 a major alteration to a major source located in an attainment area unless:

26 1. The new source or facility on which a major alteration has been made

1 will meet an emission limitation which is the best available control tech-  
2 nology (BACT) for that source or facility.

3 2. The person applying for the permit performs an air impact analysis  
4 and monitoring as specified in R9-3-305. (air impact analysis section) and  
5 such analysis demonstrates that allowable emission increases from the pro-  
6 posed new source or major alteration, in conjunction with all other applicable  
7 emissions increases or reductions, would not cause or contribute to air  
8 pollution in violation of:

9 a. Any Arizona or national ambient air quality standard in any air  
10 quality control region; or

11 b. The applicable maximum allowable increase over the baseline concen-  
12 tration in any attainment area established in R9-3-217.B.

13 B. The requirement of paragraph A.1. shall not apply with respect to a  
14 particular pollutant if the person applying for an installation permit under  
15 this section can demonstrate either:

16 1. That the increase in allowable emissions of that pollutant from the  
17 new source or major alteration would be less than 50 tons per year, 1,000  
18 pounds per day, or 100 pounds per hour, whichever is most restrictive, or,

19 2. That no installation permit is required because a major alteration is  
20 proposed to a facility within a source under circumstances in which no net  
21 increase in emissions of the pollutant would occur at the source taking into  
22 account all emission increases and decreases at the source which would accom-  
23 pany the alteration, and no adverse air quality impact would occur.

24 C. The requirements of paragraph A.2. shall not apply to a new source or  
25 major alteration with respect to emissions which the person applying for an  
26 installation permit under this section can demonstrate are fugitive dust.

1 D. The requirements of paragraph A.2. shall not apply with respect to  
2 a particular pollutant if the person applying for an installation permit under  
3 this section can demonstrate that;

4 1. The increase in allowable emission of that pollutant from the new  
5 source or major alteration would not significantly impact any Class I area  
6 and any area where an applicable increment is known to be violated; and

7 2. The increase in allowable emissions of that pollutant from the new  
8 source or major modification would be less than 50 tons per year, 1,000 pounds  
9 per day, or 100 pounds per hour, whichever is the most restrictive; or

10 3. The emissions of the pollutant are of a temporary nature including  
11 but not limited to those from a pilot plant, a portable facility, construc-  
12 tion, or exploration; or

13 4. The installation permit is required because a major alteration is  
14 proposed to a facility within a source under circumstances in which no net  
15 increase in emissions would occur at the source, taking into account all  
16 emission increases and decreases at the source which would accompany the  
17 alteration, and no adverse air quality impact would occur.

18 E. Special rules applicable to Federal Land Managers:

19 1. Notwithstanding any other provision of this section a Federal Land  
20 Manager may present to the Director a demonstration that the emissions from  
21 a new source or a major alteration to an existing source will have signifi-  
22 cant adverse impact on visibility or other air quality related values of any  
23 Federal Mandatory Class I land designated in R9-3-217.A.2., regardless of  
24 the fact that the change in air quality resulting from emissions from such  
25 source will not cause or contribute to concentrations which exceed the maxi-  
26 mum allowable increases for Class I areas. If the Director concurs with such

1 demonstration, the permit shall be denied.

2 2. If the owner or operator of a proposed new source or existing source  
3 for which major alteration is proposed demonstrates to the Federal Land Manager  
4 that the emissions from such source will have no significant adverse impact on  
5 the visibility or other air quality related values of such land and the Federal  
6 Land Manager so certifies to the Director, the Director may issue a permit  
7 notwithstanding the fact that the change in air quality resulting from emissions  
8 by such source will cause or contribute to concentrations which exceed the  
9 maximum allowable increases for a Class I area. Such a permit shall require  
10 that such source comply with such emission limitations as may be necessary to  
11 assure that emissions of sulfur dioxide and particulate matter will not exceed  
12 the following maximum allowable increases over baseline concentrations for such  
13 pollutants:

14	Maximum allowable increase	
15	<u>(Micrograms per cubic meter)</u>	
16	Particulate matter:	
17	Annual geometric mean -	19
18	24-hour maximum -	37
19	Sulfur Dioxide:	
20	Annual arithmetic mean -	20
21	24-hour maximum -	91
22	3-hour maximum -	325

23 3. The owner or operator of a proposed source which cannot be approved  
24 under paragraphs E.1, and E.2, may demonstrate to the Governor or his designee,  
25 after notice and public hearing that the source cannot be constructed by reason  
26 of any maximum allowable increase for sulfur dioxide for a period of 24 hours or

1 less applicable to any Class I area, and in the case of a mandatory Class I  
2 area, that a variance under this paragraph will not adversely affect the visi-  
3 bility or other air quality related values of the area. The Governor or his  
4 designee, after consideration of the Federal Land Manager's recommendation (if  
5 any) and subject to his concurrence, may grant a variance from such maximum  
6 allowable increase.

7 4. A variance granted pursuant to subparagraph E.3, without the con-  
8 currence of the Federal Land Manager must be approved by the President pursuant  
9 to the procedures in Section 165 of the Act.

10 5. A variance granted pursuant to subparagraph E.3, shall allow the  
11 maximum allowable increase for sulfur dioxide for a period of 24 hours or less  
12 to be exceeded not more than 18 days during any annual period. During such  
13 days the source shall comply with such emission limitations as may be necessary  
14 to assure that emissions will not exceed the following maximum allowable in-  
15 creases occurring over the baseline concentration for such pollutants:

16	Maximum allowable increase	
17	<u>(Micrograms per cubic meter)</u>	
18	Sulfur Oxides	
19	Period of exposure:	
20	Low terrain areas;	
21	24-hour maximum -	36
22	3-hour maximum -	130
23	High terrain areas;	
24	24-hour maximum -	62
25	3-hour maximum -	221

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MATERIAL ON THESE PAGES

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PENDING PUBLIC HEARING.

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19 R9-3-305. Air quality impact analysis and monitoring requirements

20 A. The air quality impact analysis required by R9-3-304, shall include,  
21 at the discretion of the Director, any or all of the following:

- 22 1. A description of the nature, location, design, capacity and typical  
23 operating schedule of the proposed new source or major alteration including  
24 specifications and drawings showing the design and plant layout of the source;  
25 2. A schedule of construction of the new source or major alteration;  
26 3. A detailed description as to what system of continuous emission

1 reduction is planned for the proposed new source or major alteration, emission  
2 estimates, and any other information necessary to determine that emission  
3 limitations will be met;

4 4. An analysis of the impairment to visibility, soils and vegetation  
5 that would occur as a result of the proposed new source or major alteration  
6 and general commercial, residential, industrial and other growth associated  
7 with the source or alteration. The permit applicant need not provide an  
8 analysis of the impact on vegetation having no significant commercial or  
9 recreational value.

10 5. An analysis of continuous air quality monitoring data for any pollu-  
11 tant which will be emitted by the new source or major alteration for which a  
12 national ambient air quality standard exists, except non-methane hydrocarbons.  
13 Such data shall relate to, and shall have been gathered over the year preceding  
14 receipt of the complete application, unless the owner or operator demonstrates  
15 to the Director's satisfaction that such data gathered over a portion or  
16 portions of that year or another representative year would be adequate to  
17 determine that the new source or major alteration would not cause or contribute  
18 to a violation of an Arizona air quality standard contained in Article 2.

19 6. The air quality impact of the proposed source or major alteration  
20 including meteorological and topographical data necessary to make such  
21 estimates.

22 7. Information on the air quality impacts of growth associated with the  
23 proposed source or major alteration as well as the nature and extent of  
24 general commercial, residential, industrial and other growth which has occurred  
25 in the area affected by the source's emissions since August 7, 1977.

26 B. The person applying for an installation permit in an attainment area

1 to which this section applies, after construction of the new source or a  
2 major alteration, shall conduct such ambient air quality monitoring as the  
3 Director determines may be necessary to establish the effect which emissions  
4 from the new source or major alteration of a pollutant for which a national  
5 ambient air quality standard exists (other than non-methane hydrocarbons) may  
6 have, or is having, on attainment or maintenance of ambient air quality  
7 standards in an area which such emissions would affect.

8  
9  
10 R9-3-306. Operating permits

11 A. Except as provided in R9-3-1101 (Jurisdiction and Authority), no  
12 person shall operate any major source without first obtaining an operating  
13 permit from the Director. When an installation permit is required to commence  
14 construction of a new source or major alteration of an existing source an  
15 operating permit shall not be issued to the new source or for the major  
16 alteration until such time as the installation permit has been obtained.

17 B. No operating permit will be issued unless:

18 1. The applicant demonstrates that the source will be in compliance  
19 with all applicable regulatory standards.

20 2. The source will not emit any air pollutants in amounts which will  
21 prevent attainment or maintenance in any other state of any national primary  
22 or secondary ambient air quality standard.

23 3. For any major source operating in a nonattainment area for any  
24 pollutant(s), the owner or operator demonstrates that there will be reductions  
25 in the emissions of such pollutant(s) as may be obtained through the adoption  
26 of reasonably available control technology.

1           4. The person applying for an operating permit demonstrates that the new  
2 source or major alteration will not emit pollutants in excess of the applicable  
3 hazardous air pollutant standards contained in Article 9 (Hazardous air  
4 pollutant standards).

5           5. The person applying for an operation permit demonstrates that the new  
6 source or major alteration will not emit pollutants in excess of the applicable  
7 emission limitation for non-point sources contained in Article 4.

8           C. Applications for operating permit:

9           1. An application for an operating permit shall be made on forms fur-  
10 nished by the Director.

11          2. A separate application is required for each source.

12          3. Each application shall be signed by the applicant.

13          4. Each application for an initial operating permit shall be accompanied  
14 by plans, descriptions, specifications and drawings showing the design of the  
15 new source or major alteration, stack data, the nature and amount of emissions.  
16 An application for a renewal of an operating permit shall be accompanied by  
17 plans, descriptions, specifications and drawings showing any changes in plant  
18 configuration from that which existed on the date of issuance of the most  
19 recent operating permit.

20          5. Each application shall include information concerning compliance with  
21 any conditions on any prior permit.

22          6. The application shall include such information as is required by  
23 Appendix 2 and such other information as the Director or applicable provisions  
24 of these regulations shall prescribe.

25          7. The Director may waive the submission by the applicant of any of the  
26 data or information required by this section if he shall deem such data to be

1 inappropriate or unnecessary.

2 D. Within twenty days after the receipt of an application, the Director  
3 shall advise the applicant of any additional information or testing required.  
4 No application shall be considered complete and properly filed until the  
5 applicant has submitted such information or test results.

6 E. The Director may require the applicant to provide additional infor-  
7 mation or to provide and maintain such ambient air monitoring facilities or  
8 ambient air impact modeling as necessary to secure information that will  
9 disclose the effect emissions from the source will have on maintenance and  
10 attainment of ambient air quality standards. An item of equipment not covered  
11 by an operating permit may be operated for purposes of testing only if  
12 specific written permission has been obtained from the Director designating  
13 the dates of such operation for testing.

14 F. The Director shall take final action on the application within thirty  
15 days of the proper filing of the completed application. The Director shall  
16 notify the applicant in writing of his approval, conditional approval or  
17 denial. Such notification shall be made available for public inspection in  
18 at least one location in the air quality control region in which the source  
19 is located.

20 G. Each operating permit issued under these Rules and Regulations shall  
21 include the following provisions:

- 22 1. A description of the facility and equipment covered and its location,  
23 or for a mobile source, the area in which it may operate.
- 24 2. The name and address of the owner or operator of the source.
- 25 3. The date the permit is issued and the date it will expire.
- 26 4. The terms and conditions specified in R9-3-308.

1 H. The issuance of an operating permit shall not relieve the owner or  
2 operator from compliance with any local, state or Federal law or regulation,  
3 nor does any other law, regulation or permit relieve the owner or operator  
4 from obtaining a permit required under this Chapter.

5 I. Any owner or operator who fails to obtain an operating permit required  
6 by the Chapter, or who fails to comply with a permit as approved and condi-  
7 tioned by the Director, shall be subject to enforcement action under the pro-  
8 visions of Arizona Revised Statutes §§ 36-1709 (order of abatement), 36-1715  
9 (injunctive relief), and 36-1720 (misdemeanor).

10 J. Operating permits issued pursuant to this section shall be issued  
11 for a period of one year except that operating permits in the form of primary  
12 nonferrous smelter orders authorized under section 119 of the Act as amended  
13 may be issued for the periods provided for therein.

14  
15  
16 R9-3-307. Replacement

17 A. An existing source or facility, upon replacement, becomes a new source  
18 and is subject to the provisions of R9-3-301, irrespective of any change in  
19 emission rate.

20 B. "Replacement" means the reconstruction of components of an existing  
21 facility to such an extent that:

22 1. The fixed capital cost of the new components exceeds fifty percent of  
23 the fixed capital cost that would be required to construct a comparable entirely  
24 new facility and all associated equipment, and

25 2. It is technologically and economically feasible to meet the appli-  
26 cable standards set forth in these regulations.

1 C. "Fixed capital cost" means the capital needed to provide all the de-  
2 preciable components.

3 D. If an owner or operator of an existing facility proposes to reconstruct  
4 components, and the fixed capital cost of the new components exceeds fifty  
5 percent of the fixed capital cost that would be required to construct a com-  
6 parable entirely new facility, he shall notify the Director of the proposed  
7 reconstruction. The notice must be postmarked not less than sixty days before  
8 construction of the components is commenced and must include the following  
9 information:

- 10 1. Name and address of the owner or operator.
- 11 2. The location of the existing facility.
- 12 3. A brief description of the existing facility and the components which  
13 are to be replaced.
- 14 4. A description of the existing air pollution control equipment and  
15 the proposed air pollution control equipment.
- 16 5. An estimate of the fixed capital cost of the replacements and of  
17 constructing a comparable entirely new facility.
- 18 6. The estimated life of the existing facility after the replacements.
- 19 7. A discussion of any economic or technical limitations the facility  
20 may have in complying with the applicable standards of performance after the  
21 proposed replacements.
- 22 8. The extent to which, consistent with the requirements of R9-3-302.B.2.  
23 the proposed replacement would increase allowable emissions at the existing  
24 facility.

25 E. The Director will determine, within thirty days of the receipt of the  
26 notice required by subsection D. of this section and any additional information

1 he may reasonably require, whether the proposed reconstruction constitutes  
2 replacement.

3 F. The Director's determination under subsection E. shall be based on:

4 1. The fixed capital cost of the reconstructed components in comparison  
5 to the fixed capital cost that would be required to construct a comparable  
6 entirely new facility;

7 2. The estimated life of the facility after the reconstruction compared  
8 to the life of a comparable entirely new facility.

9 3. The extent to which the components being reconstructed cause or  
10 contribute to the emissions from the facility; and

11 4. Any economic or technical limitations on compliance with applicable  
12 standards of performance which are inherent in the proposed reconstruction.

13  
14  
15 R9-3-308. Permit conditions

16 A. An installation or operating permit shall contain such terms and  
17 conditions as the Director deems necessary to assure a source's compliance  
18 with the requirements of Article 1, Chapter 14 of Title 36 of the Arizona  
19 Revised Statutes and the provisions of this chapter. The Director may include,  
20 but is not limited to permit conditions which require:

21 1. Compliance with emission limitations.

22 2. Compliance with design, equipment, work practice or operations  
23 standards if emission limitations are not feasible.

24 3. Recordkeeping and reporting. Such requirements shall be consistent  
25 with the provisions of A.R.S. § 36-1708.

26 4. Ambient air quality monitoring.

1           5. Emissions monitoring.

2           6. Notification to the Director of such events as the commencement of  
3 construction, initial startup and performance testing.

4           7. Preventive maintenance of air pollution control equipment.

5           8. Maintenance and calibration of ambient air quality and emissions  
6 monitoring equipment.

7  
8  
9 R9-3-309. Finding of no violation

10           A. Emissions in excess of an applicable emission limitation shall not  
11 be considered a violation of that limitation or the terms of a person's  
12 installation, operating, or conditional permit if the Director makes a written  
13 finding that:

14           1. The person complied with the excess emissions reporting requirements  
15 of R9-3-314;

16           2. The person has submitted an application for a finding of no violation  
17 on a form furnished by the Bureau of Air Quality Control within five working  
18 days of the last date on which excess emissions occurred;

19           3. The excess emissions were attributable to a start-up or shut-down of  
20 process or pollution control equipment or a malfunction of such equipment;

21           4. The air pollution control equipment, process equipment, or processes  
22 were at all times maintained and operated, to the maximum extent practicable,  
23 in a manner consistent with good practice for minimizing emissions;

24           5. Where repairs were required, such repairs were made in an expeditious  
25 fashion when the person knew or should have known that applicable emissions  
26 limitations were being exceeded. Off-shift labor and overtime were utilized

1 where practical to insure that such repairs were made as expeditiously as  
2 possible. If off-shift labor and overtime were not utilized, the person  
3 satisfactorily demonstrated that such measures were impractical;

4 6. The amount and duration of the excess emissions (including any bypass  
5 operation) were minimized to the maximum extent practicable during periods of  
6 such emissions;

7 7. All feasible steps were taken to minimize the impact of the excess  
8 emissions on potential violations of ambient air quality standards;

9 8. The excess emissions are not part of a recurring pattern indicative  
10 of inadequate design, operation, or maintenance; and,

11 9. During the period of excess emissions for which a finding of no  
12 violation is sought, there were no measured violations of the ambient air  
13 quality standards established in Article 2 of this chapter which could be  
14 attributed to the person.

15 B. It shall be the burden of the person seeking a finding of no violation  
16 to demonstrate, through submission of the data and information required by  
17 this regulation, that the grounds exist for such a finding.

18 C. A finding of no violation made pursuant to this regulation shall be  
19 rescinded if:

- 20 1. A person misrepresents facts in the application for the findings; or,  
21 2. A person fails to disclose facts material to the finding of which he  
22 had knowledge or should have had knowledge at the time he made the application.

23  
24  
25 R9-3-310. Test methods and procedures

26 A. Except as otherwise specified in these regulations, the applicable

1 testing procedures contained in the Arizona Testing Manual shall be used to  
2 determine compliance with the standards established in this chapter or con-  
3 tained in installation or operating permits issued pursuant to this chapter.

4 B. The heat content of solid fuel shall be determined according to ASTM  
5 method D-271, "laboratory sampling and analysis of coal or coke" and ASTM  
6 method D-2015, "gross calorific value of solid fuel by the adiabatic bomb  
7 calorimeter." These methods shall be used as guides but may be modified,  
8 adjusted or added to by the Director to suit specific sampling conditions  
9 or needs and shall be based upon good engineering practice, judgment and  
10 experience.

11 C. Equivalent test methods and procedures may be used in lieu of those  
12 described in subsections A and B of this regulation if approved by the  
13 Director.

14  
15  
16 R9-3-311. Air quality models

17 A. Where the Director requires a person requesting an installation or  
18 operating permit under this chapter to perform air quality impact modeling to  
19 obtain such permit, the modeling shall be performed in a manner consistent  
20 with the "Guideline on Air Quality Models" (hereinafter called the "Guideline")  
21 issued by the United States Environmental Protection Agency in April 1978.

22 B. Where the person requesting an installation or operating permit can  
23 demonstrate that an air quality impact model specified in the Guideline is  
24 inappropriate, the model may be modified or another model substituted. However,  
25 before such modification or substitution can occur the Director must make a  
26 written finding that:

- 1           1. No model in the Guideline is appropriate for a particular permit  
2 under consideration, or,
- 3           2. The data base required for the appropriate model in the Guideline is  
4 not available; and,
- 5           3. A model proposed as a substitute or modification is likely to produce  
6 results equal or superior to those obtained by models in the Guideline.

7  
8  
9 R9-3-312. Performance tests

10           A. Within 60 days after a source or facility subject to the installation  
11 and operating permit requirements of this article has achieved the capability  
12 to operate at its maximum production rate on a sustained basis but no later  
13 than 180 days after initial start-up of such source or facility and at such  
14 other times as may be required by the Director, the owner or operator of such  
15 source or facility shall conduct performance test(s) and furnish the Director  
16 a written report of the results of the test(s).

17           B. Performance tests shall be conducted and data reduced in accordance  
18 with the test method and procedures contained in the Arizona Testing Manual  
19 unless the Director:

- 20           1. Specifies or approves, in specific cases, the use of a reference  
21 method with minor changes in methodology,
- 22           2. Approves the use of an equivalent method,
- 23           3. Approves the use of an alternative method the results of which he  
24 has determined to be adequate for indicating whether a specific source is in  
25 compliance, or
- 26           4. Waives the requirement for performance tests because the owner or

1 operator of a source has demonstrated by the other means to the Director's  
2 satisfaction that the source or facility is in compliance with the standard.

3 5. Nothing in this section shall be construed to abrogate the Director's  
4 authority to require testing.

5 C. Performance tests shall be conducted under such conditions as the  
6 Director shall specify to the plant operator based on representative perfor-  
7 mance of the source or facility. The owner or operator shall make available  
8 to the Director such records as may be necessary to determine the conditions  
9 of the performance tests. Operations during periods of start-up, shutdown,  
10 and malfunction shall not constitute representative conditions of performance  
11 tests unless otherwise specified in the applicable standard.

12 D. The owner or operator of a permitted source shall provide the Director  
13 two weeks prior notice of the performance test to afford the Director the  
14 opportunity to have an observer present.

15 E. The owner or operator of a permitted source shall provide, or cause  
16 to be provided, performance testing facilities as follows:

- 17 1. Sampling ports adequate for test methods applicable to such facility.
- 18 2. Safe sampling platform(s).
- 19 3. Safe access to sampling platform(s).
- 20 4. Utilities for sampling and testing equipment.

21 F. Each performance test shall consist of three separate runs using the  
22 applicable test method. Each run shall be conducted for the time and under  
23 the conditions specified in the applicable standard. For the purpose of  
24 determining compliance with an applicable standard, the arithmetic mean of  
25 results of the three runs shall apply. In the event that a sample is acciden-  
tally lost or conditions occur in which one of the three runs must be discon-

1     tinued because of forced shutdown, failure of an irreplaceable portion of the  
2     sample train, extreme meteorological conditions, or other circumstances beyond  
3     the owner or operator's control, compliance may, upon the Director's approval,  
4     be determined using the arithmetic mean of the results of the two other runs.

5             G. Except as provided in subsection H. compliance with the emission limits  
6     established in this chapter or as prescribed in permits issued pursuant to this  
7     chapter shall be determined only by the performance tests specified in this  
8     section.

9             H. In addition to performance tests specified in this section, compliance  
10    with specific emission limits may be determined by:

11            1. Opacity tests; and

12            2. Emission limit compliance tests specifically designated as such in  
13    the regulation establishing the emission limit to be complied with.

14            I. Nothing in this section shall be so construed as to prevent the  
15    utilization of measurements from emissions monitoring devices or techniques  
16    not designated as performance tests as evidence of compliance with applicable  
17    good maintenance and operating requirements.

18  
19  
20    R9-3-313. Existing source emission monitoring

21            A. Every source subject to an existing source performance standard as  
22    specified in this chapter shall install, calibrate, operate, and maintain all  
23    monitoring equipment necessary for continuously monitoring the pollutants and  
24    other gases specified in this section for the applicable source category.

25            1. Applicability

26            a. Fossil fuel-fired steam generators as specified in paragraph C.1. of

1 this section, shall be monitored for opacity, nitrogen oxides emissions, sulfur  
2 dioxide emissions, and oxygen or carbon dioxide.

3 b. Fluid bed catalytic cracking unit catalyst regenerators, as specified  
4 in paragraph C.4. of this section, shall be monitored for opacity.

5 c. Sulfuric acid plants, as specified in paragraph C.3. of this section,  
6 shall be monitored for sulfur dioxide emissions.

7 d. Nitric acid plants, as specified in paragraph C.2. of this section,  
8 shall be monitored for nitrogen oxides emissions.

## 9 2. Exemptions

10 a. The provisions of this section shall not apply to any source which is  
11 scheduled for retirement within five years after inclusion of monitoring  
12 requirements for the source in these rules and regulations, provided that  
13 adequate evidence and guarantees are provided that clearly show that the  
14 source will cease operations prior to the expiration of such date.

15 b. Emission monitoring shall not be required when the source of emissions  
16 is not operating.

## 17 3. Variations

18 a. The Director may approve, on a case-by-case basis, alternative  
19 monitoring requirements different from the provisions of this section if the  
20 installation of a continuous emission monitoring system cannot be implemented  
21 by a source due to physical plant limitations or extreme economic reasons.  
22 Alternative monitoring procedures will be specified by the Director on a  
23 case-by-case basis and must include as a minimum, annual manual stack tests  
24 for the pollutants identified for each type of source in this section.

25 Examples of such special cases include, but are not limited to, the following:

26 b. Alternative monitoring requirements may be prescribed when installa-

1 tion of a continuous monitoring system or monitoring device specified by this  
2 section would not provide accurate determinations of emissions (e.g., con-  
3 densed, uncombined water vapor may prevent an accurate determination of  
4 opacity using commercially available continuous monitoring systems).

5 c. Alternative monitoring requirements may be prescribed when the  
6 affected facility is infrequently operated (e.g., some affected facilities  
7 may operate less than one month per year).

8 d. Alternative monitoring requirements may be prescribed when the  
9 Director determines that the requirements of this section would impose an  
10 extreme economic burden on the source owner or operator.

11 e. Alternative monitoring requirements may be prescribed when the  
12 Director determines that monitoring systems prescribed by this section cannot  
13 be installed due to physical limitations at the facility.

14 4. Monitoring system malfunction: A temporary exemption from the monitor-  
15 ing and reporting requirements of this section may be provided during any  
16 period of monitoring system malfunction, provided that the source owner or  
17 operator shows to the satisfaction of the Director that the malfunction was  
18 unavoidable and is being repaired as expeditiously as practicable.

19 B. Installation and performance testing required under this section  
20 shall be completed and monitoring and recording shall commence within 18  
21 months of the effective date of this section.

22 C. Minimum monitoring requirements.

23 1. Fossil-fuel fired steam generators: Each fossil-fuel fired steam  
24 generator, except as provided in the following subparagraphs, with an annual  
25 average capacity factor of greater than 30 percent, as reported to the Federal  
26 Power Commission for calendar year 1976, or as otherwise demonstrated to the

1 Department by the owner or operator, shall conform with the following monitor-  
2 ing requirements when such facility is subject to an emission standard for the  
3 pollutant in question.

4 a. A continuous monitoring system for the measurement of opacity which  
5 meets the performance specifications of this section shall be installed,  
6 calibrated, maintained, and operated in accordance with the procedures of this  
7 section by the owner or operator of any such steam generator of greater than  
8 250 million Btu per hour heat input except where:

- 9 i. Gaseous fuel is the only fuel burned, or  
10 ii. Oil or a mixture of gas and oil are the only fuels burned and the  
11 source is able to comply with the applicable particulate matter and opacity  
12 regulations without utilization of particulate matter collection equipment,  
13 and where the source has never been found to be in violation through any  
14 administrative or judicial proceedings, or accepted responsibility for any  
15 violation of any visible emission standard.

16 b. A continuous monitoring system for the measurement of sulfur dioxide  
17 which meets the performance specifications of this section shall be installed,  
18 calibrated, using sulfur dioxide calibration gas mixtures or other gas mixtures  
19 approved by the Director, maintained and operated on any fossil-fuel fired  
20 steam generator of greater than 250 million Btu per hour heat input which has  
21 installed sulfur dioxide pollutant control equipment.

22 c. A continuous monitoring system for the measurement of nitrogen oxides  
23 which meets the performance specification of this section shall be installed,  
24 calibrated, using nitric oxide calibration gas mixtures or other gas mixtures  
25 approved by the Director, maintained and operated on fossil-fuel fired steam  
26 generators of greater than 1000 million Btu per hour heat input when such

1 facility is located in an air quality control region where the Director has  
2 specifically determined that a control strategy for nitrogen dioxide is nec-  
3 essary to attain the ambient air quality standard specified in R9-3-206.,  
4 unless the source owner or operator demonstrates during source compliance tests  
5 as required by the Department that such a source emits nitrogen oxides at  
6 levels 30 percent or more below the emission standard within this chapter.

7 d. A continuous monitoring system for the measurement of the percent  
8 oxygen or carbon dioxide which meets the performance specifications of this  
9 section shall be installed, calibrated, operated, and maintained on fossil-  
10 fuel fired steam generators where measurements of oxygen or carbon dioxide in  
11 the flue gas are required to convert either sulfur dioxide or nitrogen  
12 oxides continuous emission monitoring data, or both, to units of the emission  
13 standard within this chapter.

14 2. Nitric acid plants: Each nitric acid plant of greater than 300 tons  
15 per day production capacity, the production capacity being expressed as 100  
16 percent acid located in an air quality control region where the Director has  
17 specifically determined that a control strategy for nitrogen dioxide is  
18 necessary to attain the ambient air quality standard specified in R9-3-206,  
19 shall install, calibrate, using nitrogen dioxide calibration gas mixtures,  
20 maintain, and operate a continuous monitoring system for the measurement of  
21 nitrogen oxides which meets the performance specifications of this section  
22 for each nitric acid producing facility within such plant.

23 3. Sulfuric acid plants: Each sulfuric acid plant as defined in R9-3-101.A.,  
24 of greater than 300 tons per day production capacity, the production being  
25 expressed as 100 percent acid, shall install, calibrate, using sulfur dioxide  
26 calibration gas mixtures or other gas mixtures approved by the Director,

1 maintain and operate a continuous monitoring system for the measurement of  
2 sulfur dioxide which meets the performance specifications of this section for  
3 each sulfuric acid producing facility within such a plant.

4 4. Fluid bed catalytic cracking unit catalyst regenerators at petroleum  
5 refineries. Each catalyst regenerator for fluid bed catalytic cracking units  
6 of greater than 20,000 barrels per day fresh feed capacity shall install,  
7 calibrate, maintain and operate a continuous monitoring system for the  
8 measurement of opacity which meets the performance specifications of this  
9 section for each regenerator within such refinery.

10 D. Minimum specifications: Owners or operators of monitoring equipment  
11 installed to comply with this section, except as provided in paragraph D.2.,  
12 shall demonstrate compliance with the following performance specifications.

13 1. The performance specifications set forth in Appendix B of 40 CFR 60  
14 are incorporated herein by reference, and shall be used by the Director to  
15 determine acceptability of monitoring equipment installed pursuant to this  
16 section. However where reference is made to the Administrator in Appendix B  
17 of 40 CFR 60, the term "Director" should be inserted for the purpose of this  
18 section. Also, where reference is made to the "Reference Method" in Appendix  
19 B of 40 CFR 60, the Director may allow the use of either the State approved  
20 reference method or the Federally approved reference method as published in  
21 40 CFR 60. The performance specifications to be used with each type of  
22 monitoring system are listed below.

23 a. Continuous monitoring systems for measuring opacity shall comply  
24 with performance specification 1.

25 b. Continuous monitoring systems for measuring nitrogen oxides shall  
26 comply with performance specification 2.

1           c. Continuous monitoring systems for measuring sulfur dioxide shall  
2 comply with performance specification 2.

3           d. Continuous monitoring systems for measuring oxygen shall comply  
4 with performance specification 3.

5           e. Continuous monitoring systems for measuring carbon dioxide shall  
6 comply with performance specification 3.

7           2. Exemptions: Any source which has purchased an emission monitoring  
8 system(s) prior to September 11, 1974, may be granted an exemption by the  
9 Director from meeting such test procedures prescribed in paragraph D.1. for  
10 a period not to exceed five years from the effective date of this section.

11           3. Calibration gases: Span and zero gases should be traceable to National  
12 Bureau of Standards reference gases whenever these reference gases are available.  
13 Every six months from date of manufacture, span and zero gases shall be rean-  
14 alyzed by conducting triplicate analyses using the reference methods in  
15 Appendix A. Part 60, Chapter 1, Title 40, CFR as amended: For sulfur dioxide,  
16 use Reference Method 6; for nitrogen oxides, use Reference Method 7; and for  
17 carbon dioxide or oxygen, use Reference Method 3. The gases may be analyzed  
18 at less frequent intervals if longer shelf lives are guaranteed by the  
19 manufacturer.

20           4. Cycling times: Cycling times include the total time monitoring system  
21 required to sample, analyze and record an emission measurement.

22           a. Continuous monitoring systems for measuring opacity shall complete  
23 a minimum of one cycle of sampling and analyzing for each successive six-  
24 minute period.

25           b. Continuous monitoring systems for measuring oxides of nitrogen,  
26 carbon dioxide, oxygen, or sulfur dioxide shall complete a minimum of one

1 cycle of operation (sampling, analyzing, and data recording) for each  
2 successive 15-minute period.

3 5. Monitor location: All continuous monitoring systems or monitoring  
4 devices shall be installed such that representative measurements of emissions  
5 or process parameter (i.e., oxygen, or carbon dioxide) from the affected  
6 facility are obtained. Additional guidance for location of continuous mon-  
7 itoring systems to obtain representative samples are contained in the applic-  
8 able performance specifications of Appendix B of 40 CFR 60.

9 6. Combined effluents: When the effluents from two or more affected  
10 facilities of similar design and operating characteristics are combined before  
11 being released to the atmosphere through more than one point, separate monitors  
12 shall be installed.

13 7. Zero and drift: Owners or operators of all continuous monitoring  
14 systems installed in accordance with the requirements of this section shall  
15 record the zero and span drift in accordance with the method prescribed by  
16 the manufacturer of such instruments; shall subject the instruments to the  
17 manufacturer's recommended zero and span check at least once daily, using  
18 calibration gases specified in subsection C. as applicable, unless the man-  
19 ufacturer has recommended adjustments at shorter intervals, in which case  
20 such recommendations shall be followed; shall adjust the zero span whenever  
21 the 24-hour zero drift or 24-hour calibration drift limits of the applicable  
22 performance specifications in Appendix B of Part 60, Chapter 1, Title 40 CFR  
23 are exceeded; and shall adjust continuous monitoring systems referenced by  
24 paragraph D.2. of this section whenever the 24-hour zero drift or 24-hour  
25 calibration drift exceed 10 percent of the emission standard.

26 8. Span: Instrument span should be approximately 200 percent of the

1 expected instrument data display output corresponding to the emission standard  
2 for the source.

3 E. Minimum data requirements: The following paragraphs set forth the  
4 minimum data reporting requirements for sources employing continuous monitoring  
5 equipment as specified in this section. These periodic reports do not relieve  
6 the source operator from the reporting requirements of Section R9-3-314.

7 1. The owners or operators of facilities required to install continuous  
8 monitoring systems shall submit to the Director a written report of excess  
9 emissions for each calendar quarter and the nature and cause of the excess  
10 emissions, if known. The averaging period used for data reporting must  
11 correspond to the averaging period specified in the emission standard for  
12 the pollutant source category in question. The required report shall include,  
13 as a minimum, the data stipulated in this subsection.

14 2. For opacity measurements, the summary shall consist of the magnitude  
15 in actual percent opacity of all six-minute opacity averages greater than any  
16 applicable standards for each hour of operation of the facility. Average values  
17 may be obtained by integration over the averaging period or by arithmetically  
18 averaging a minimum of four equally spaced, instantaneous opacity measurements  
19 per minute. Any time periods exempted shall be deleted before determining  
20 any averages in excess of opacity standards.

21 3. For gaseous measurements the summary shall consist of emission averages  
22 in the units of the applicable standard for each averaging period during which  
23 the applicable standard was exceeded.

24 4. The date and time identifying each period during which the continuous  
25 monitoring system was inoperative, except for zero and span checks and the  
26 nature of system repair or adjustment shall be reported. The Director may

1 require proof of continuous monitoring system performance whenever system  
2 repairs or adjustments have been made.

3 5. When no excess emissions have occurred and the continuous monitoring  
4 system(s) have not been inoperative, repaired, or adjusted, such information  
5 shall be included in the report.

6 6. Owners or operators of affected facilities shall maintain a file of  
7 all information reported in the quarterly summaries, and all other data  
8 collected either by the continuous monitoring system or as necessary to convert  
9 monitoring data to the units of the applicable standard for a minimum of two  
10 years from the date of collection of such data or submission of such summaries.

11 F. Data reduction: Owners or operators of affected facilities shall use  
12 the following procedures for converting monitoring data to units of the stan-  
13 dard where necessary.

14 1. For fossil-fuel fired steam generators the following procedures shall  
15 be used to convert gaseous emission monitoring data in parts per million to  
16 g/million cal (lb/million Btu) where necessary.

17 a. When the owner or operator of a fossil-fuel fired steam generator  
18 elects under subparagraph C.1.d. of this rule to measure oxygen in the flue  
19 gases, the measurements of the pollutant concentration and oxygen concentration  
20 shall each be on a consistent basis (wet or dry).

21 i. When measurements are on a wet basis, except where wet scrubbers are  
22 employed or where moisture is otherwise added to the stack gases, the  
23 following conversion procedure shall be used:

24 
$$E = C_{ws} F_w \left( \frac{20.9}{20.9(1 - B_{wa}) - \% O_{2ws}} \right)$$

25 ii. When measurements are on a wet basis and the water vapor content of  
26 the stack gas is determined at least once every fifteen minutes, the following

conversion procedure shall be used:

$$E = C_{ws} F \left( \frac{20.9}{20.9(1 - B_{ws}) - \% O_{2ws}} \right)$$

Note: This equation is approved in principle. Approval for actual practice is contingent upon demonstrating the ability to accurately determine  $B_{ws}$  such that any absolute error in  $B_{ws}$  will not cause an error of more than  $\pm 1.5$  percent in the term  $\left( \frac{20.9}{20.9(1 - B_{ws}) - \% O_{2ws}} \right)$

iii. When measurements are on a dry basis, the following conversion procedure shall be used:

$$E_Q = CF \left[ \frac{20.9}{20.9 - \% O_2} \right]$$

b. When the owner or operator elects under subparagraph C.1.d. of this section to measure carbon dioxide in the flue gases, the measurement of the pollutant concentration and the carbon dioxide concentration shall each be on a consistent basis (wet or dry) and the following conversion procedure used:

$$E_Q = CF_C \left[ \frac{100}{\% CO_2} \right]$$

c. The values used in the equations under paragraph F.1. are derived as follows:

$E_Q$  = pollutant emission, g/million cal (lb/million Btu)

$C$  = pollutant concentration, g/dscm (lb/dscf), determined by multiplying the average concentration (ppm) for each hourly period by  $4.16 \times 10^{-5}$  M g/dscm per ppm ( $2.64 \times 10^{-9}$  M lb/dscf per ppm) where M = pollutant molecular weight, g/g - mole (lb/lb-mole), M = 64 for sulfur dioxide and 46 for oxides of nitrogen.

$C_{ws}$  = pollutant concentrations at stack conditions, g/wscm (lb/wscf), determined by multiplying the average concentration (ppm) for each one-hour period by  $4.15 \times 10^{-5}$  M g/wscm per ppm ( $2.59 \times 10^{-9}$  M lb/wscf per ppm) where M = pollutant molecular weight, g/g mole (lb/lb mole). M = 64 for sulfur dioxide and 46 for nitrogen oxides.

1            $\%O_2, \%CO_2$  = Oxygen or carbon dioxide volume (expressed as percent) deter-  
2 mined with equipment specified under subparagraph D.1.d. or D.1.e. of this  
3 section.

4            $\%O_{2ws}$  = Oxygen volume (expressed as percent - wet basis) determined with  
5 equipment specified under subparagraph D.1.d. of this section.

6            $F, F_c$  = A factor representing a ratio of the volume of dry flue gases  
7 generated to the calorific value of the fuel combusted (F), a factor repre-  
8 senting a ratio of the volume of carbon dioxide generated to the calorific  
9 value of the fuel combusted ( $F_c$ ), respectively. Values of F and  $F_c$  are given  
10 in § 60.45(f) of Part 60, Chapter 1, Title 40, Code of Federal Regulations.

11            $F_w$  = A factor representing a ratio of the volume of wet flue gases  
12 generated to the caloric value of the fuel combusted. Values of  $F_w$  are given  
13 in Federal Register, Vol. 41, October 12, 1976, p. 44838, a.4.

14            $B_{wa}$  = Proportion by volume of water vapor in the ambient air. Approval  
15 may be given for determination of  $B_{wa}$  by on-site instrumental measurement  
16 provided that the absolute accuracy of the measurement technique can be  
17 demonstrated to be within  $\pm 0.7$  percent water vapor. Estimation methods for  
18  $B_{wa}$  are given in Federal Register, Vol. 41, October 12, 1976, p. 44838, a.5.

19            $B_{ws}$  = Proportion by volume of water vapor in the stack gas.

20           2. For sulfuric acid plants as defined in R9-3-101.A the owner or operator  
21 shall:

22           a. Establish a conversion factor three times daily according to the  
23 procedures of § 60.84(b) of Chapter 1, Title 40, Code of Federal Regulations  
24 dated 10/6/75;

25           b. Multiply the conversion factor by the average sulfur dioxide  
26 concentration in the flue gases to obtain average sulfur dioxide emissions

1 in Kg/metric ton (1b/short ton); and

2 c. Report the average sulfur dioxide emission for each averaging period  
3 in excess of the applicable emission standard in the quarterly summary.

4 3. For nitric acid plants the owner or operator shall:

5 a. Establish a conversion factor according to the procedures of § 60.73(b)  
6 of Chapter 1, Title 40, Code of Federal Regulations;

7 b. Multiply the conversion factor by the average nitrogen oxides  
8 concentration in the flue gases to obtain the nitrogen oxides emissions in  
9 the units of the applicable standard;

10 c. Report the average nitrogen oxides emission for each averaging  
11 period in excess of applicable emission standard in the quarterly summary.

12 4. The Director may allow data reporting or reduction procedures varying  
13 from those set forth in this section if the owner or operator of a source  
14 shows to the satisfaction of the Director that his procedures are at least as  
15 accurate as those in this section. Such procedures may include but are not  
16 limited to the following:

17 a. Alternative procedures for computing emission averages that do not  
18 require integration of data (e.g., some facilities may demonstrate that the  
19 variability of their emissions is sufficiently small to allow accurate  
20 reduction of data based upon computing averages from equally spaced data  
21 points over the averaging period).

22 b. Alternative methods of converting pollutant concentration measure-  
23 ments to the units of the emission standards.

24  
25  
26 R9-3-314. Excess emissions reporting

2 A. The owner or operator of any source issued an installation, condi-  
3 tional or operating permit shall report to the Director or his designated  
4 representative any emissions in excess of the limits established by this  
5 chapter or the applicable installation or operating permit. Such report shall  
6 be in writing and shall be submitted within fifteen working days of the date on  
7 which the excess emissions occurred.

8 B. The excess emissions report shall contain the following information:

9 1. The identity of the stack and/or other emission points where the  
10 excess emissions occurred.

11 2. The magnitude of the excess emissions expressed in the units of the  
12 applicable emission limitation and the operating data and calculations used  
13 in determining the magnitude of the excess emissions.

14 3. The time and duration or expected duration of the excess emissions.

15 4. The identity of the equipment causing the excess emissions.

16 5. The nature and cause of such emissions.

17 6. If the excess emissions were the result of a malfunction, steps taken  
18 to remedy the malfunction and the steps taken or planned to prevent the re-  
19 currence of such malfunctions.

20 7. The steps that were or are being taken to limit the excess emissions.  
21 If the source's operating permit contains procedures governing source operation  
22 during periods of start-up or malfunction and the excess emissions resulted  
23 from start-up or malfunction, the report shall contain a list of the steps  
24 taken to comply with the permit procedures.

25 C. Information required to be submitted by this regulation shall be sum-  
26 marized and reported in writing to the Director in accordance with provisions  
27 contained in the applicable installation or operating permit issued pursuant

1 to the requirements of this chapter.

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4 R9-3-315. Posting of permit

5 A person who has been granted an operating permit shall firmly affix such  
6 permit, an approved facsimile of such permit, or other approved identification  
7 bearing the permit number upon such equipment for which the permit is issued  
8 in such a manner as to be clearly visible and accessible. In the event that  
9 such equipment is so constructed or operated that such permit cannot be so  
10 placed, the permit shall be mounted so as to be clearly visible in an acces-  
11 sible place within a reasonable distance of such equipment or maintained  
12 readily available at all times on the operating premises.

13  
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15 R9-3-316. Notice by building permit agencies

16 All agencies of the county or political subdivisions of the county that  
17 issue or grant building permits or approvals shall examine the plans and spec-  
18 ifications submitted by an applicant for a permit or approval to determine if  
19 an air pollution installation permit will possibly be required under the pro-  
20 visions of the Rules and Regulations in this chapter. If it appears possible  
21 that such installation permit will be required, the agency shall give written  
22 notice to such applicant to contact the Director and shall furnish a copy of  
23 such notice to the Director.

24  
25  
26 R9-3-317. Permit non-transferable; exception

1           An installation permit or an operating permit shall not be trans-  
2           ferable, whether by operation of law or otherwise, either from one location  
3           to another, from one piece of equipment to another, or from one person to  
4           another.

5           B. This regulation shall not apply to mobile or portable machinery  
6           or equipment which is transferred from one location to another provided that  
7           the owner or operator of such equipment notifies the Director in writing of  
8           the transfer at least thirty days before the transfer. The notification  
9           required under this subsection shall include:

10           1. A description of the equipment to be transferred including the  
11           operating permit number for such equipment.

12           2. A description of the present location;

13           3. A description of the location to which the equipment is to be  
14           transferred, including the availability of all utilities, such as water and  
15           electricity, necessary for the proper operation of all control equipment;

16           4. The date on which the equipment is to be moved; and

17           5. The date on which operation of the equipment will begin at the  
18           new location.

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21   R9-3-318. Denial or revocation of an installation or operating permit

22           A. The Director shall deny an installation or operating permit to a  
23           person applying for such permit if that person does not demonstrate that the  
24           source for which the permit is sought is so designed, controlled, or equipped  
25           with such air pollution control equipment that the source may be expected to  
26           comply with the provisions of Article 1, Chapter 14, Title 36 of the Arizona

1 Revised Statutes, the provisions of the regulations in this chapter or the  
2 provisions of its permit.

3 B. The Director may revoke an installation or operating permit issued  
4 pursuant to this chapter if:

5 1. The Director has reasonable cause to believe that the permit was  
6 obtained by fraud or misrepresentation.

7 2. The person applying for the permit failed to disclose a material fact  
8 required by the permit application form or the regulations applicable to the  
9 permit, of which the applicant had or should have had knowledge at the time  
10 the application was submitted.

11 3. The terms and conditions of the permit have been or are being violated.

12 C. If the Director denies or revokes an operating permit under this sec-  
13 tion, the notice of such denial or revocation shall be served on the applicant  
14 or permittee by certified mail, return receipt requested. The notice shall be  
15 a statement detailing the grounds for the action sought.

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18 R9-3-319. Permit fees

19 A. Prior to issuance of an installation or operating permit or renewal  
20 of an operating permit for any source for which a permit is required under  
21 this chapter, the applicant for the permit shall pay to the Director a fee in  
22 the amount set forth in Appendix 4.

23 B. The fee charged for an installation or operating permit shall be  
24 sufficient to cover:

25 1. The reasonable cost of reviewing and acting upon the application  
26 for the permit, and

1           2. The reasonable costs of implementing and enforcing the terms and  
2 conditions of the permit (not including any court costs or other costs  
3 associated with any enforcement action.)  
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1                   ARTICLE 4. EMISSIONS FROM EXISTING AND NEW NON-POINT SOURCES.

2       R9-3-401. General

3           For purposes of this article, any source of air contaminants which due  
4       to lack of an identifiable emission point or plume cannot be considered a point  
5       source, shall be classified as a non-point source. In applying this criteria,  
6       such items as air-curtain destructors, heater-planers, and conveyor transfer  
7       points shall be considered to have identifiable plumes.

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10      R9-3-402. Unlawful open burning

11           A. Notwithstanding the provisions of any other regulation in this chapter,  
12       it is unlawful for any person to ignite, cause to be ignited, permit to be  
13       ignited, or suffer, allow or maintain any open outdoor fire.

14           B. "Open outdoor fire", as used in this regulation, means any combustion  
15       of combustible material of any type outdoors, in the open where the products of  
16       combustion are not directed through a flue. "Flue", as used in this regulation,  
17       means any duct or passage for air, gases or the like, such as a stack or  
18       chimney.

19           C. The following fires are excepted from the provisions of this regulation:

20           1. Fires used only for cooking of food or for providing warmth for human  
21       beings or for recreational purposes or the branding of animals or the use of  
22       orchard heaters for the purpose of frost protection in farming or nursery  
23       operations.

24           2. Any fire set or permitted by any public officer in the performance of  
25       official duty, if such fire is set or permission given for the purpose of weed  
26       abatement, the prevention of a fire hazard, or instruction in the methods of

1 fighting fires.

2 3. Fires set by or permitted by the state entomologist or county agricul-  
3 tural agents of the county for the purpose of disease and pest prevention.

4 4. Fires set by or permitted by the federal government or any of its  
5 departments, agencies or agents, the state or any of its agencies, departments  
6 or political subdivisions, for the purpose of watershed rehabilitation or  
7 control through vegetative manipulation.

8 5. Fires set for the disposal of dangerous materials where there is no  
9 safe alternative method of disposal.

10 D. Permission for the setting of any fire given by a public officer in  
11 the performance of official duty under paragraphs 2., 3. or 4. of Subsection  
12 C., shall be given, in writing, and a copy of such written permission shall  
13 be transmitted immediately to the Director of the Department of Health Services  
14 and the control officer, if any, of the county, district or region in which such  
15 fire is allowed. The setting of any such fire shall be conducted in a manner  
16 and at such time as approved by the Director, unless doing so would defeat the  
17 purpose of the exemption.

18 E. Nothing in this regulation is intended to permit any practice which is  
19 a violation of any statute, ordinance, rule or regulation.  
20  
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22 R9-3-403. Forestry management

23 A. All national parks and national forests having areas which extend into  
24 more than one county of the State of Arizona, as well as all state parks and  
25 forests shall be under the jurisdiction of the Director in all matters relating  
26 to prescribed burning or slash disposal.

1           B. Each entity mentioned in Subsection A. shall comply with the following:

2           1. Each national park, state park, national forest or state forest herein-  
3 after called Forest will apply directly to the Bureau for an annual burning  
4 permit for all planned burning projects. Application will be made in the  
5 spring of the year, prior to June 1 for the ensuing fiscal year.

6           2. The application shall be in the form of a letter listing all projects.  
7 Enclosed with the letter will be copies of the Park Service or Forest Service  
8 approved burning plans for each planned project. A map of the burn and immedi-  
9 ate surrounding area must accompany each plan.

10          3. The application and the Park Service or Forest Service plans will list  
11 the following:

- 12           a. Approximate date the project will start.
- 13           b. Location of project by sections, townships, or ranges.
- 14           c. Approximate elevation of project.
- 15           d. Aspect of any slopes.
- 16           e. Description of fuel to be burned.
- 17           f. Prescribed conditions for fire (e.g. time of day, fuel moisture,  
18 weather).

19          4. Each Forest as part of the application will provide the Bureau with  
20 one emergency or 24-hour telephone number.

21          5. Each Forest will notify the Bureau when a project planned starting  
22 date is later changed. Notification will be by telephone. Any other changes,  
23 such as fuel type, duration of burn or location, should be included in this  
24 notification.

25          6. The determination to allow burning will be made on a day-by-day basis.  
26 It is the responsibility of each Park or Forest to telephone the Bureau for

1 such a determination. Large fires and those that continue during nighttime  
2 hours will require special forecasts made by the national weather service,  
3 the Department's meteorologist, or by the permittee if forecast procedures are  
4 approved by the Department. On site meteorological measurements by the per-  
5 mittee may be required as inputs to dispersion forecasts and smoke management  
6 during the burn.

7 7. Once each year, on or before December 31, the Forest Service or Parks  
8 Service shall submit to the Bureau a report outlining the progress of research  
9 and development concerning the effects of forest burn programs on air quality.  
10 Such report shall include, where applicable, innovations in the management of  
11 prescribed burning using meteorological data, as well as special burning methods,  
12 or innovative equipment. Alternatives to burning shall also be considered.  
13 Research as to cost effectiveness of the various methods should also be included.

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16 R9-3-404. Open areas

17 A. No person shall cause, suffer, allow, or permit a building or its  
18 appurtenances, or a building or subdivision site, or a driveway, or a parking  
19 area, or a vacant lot or sales lot, or an urban or suburban open area to be  
20 constructed, used, altered, repaired, demolished, cleared, or leveled, or the  
21 earth to be moved or excavated, without taking reasonable precautions to limit  
22 excessive amounts of particulate matter from becoming airborne. Dust and other  
23 types of air contaminants shall be kept to a minimum by good modern practices  
24 such as using an approved dust suppressant or adhesive soil stabilizer, paving,  
25 covering, landscaping, continuous wetting, detouring, barring access, or other  
26 acceptable means.

1 B. No person shall cause, suffer, allow, or permit a vacant lot, or an  
2 urban or suburban open area, to be driven over or used by motor vehicles,  
3 trucks, cars, cycles, bikes, or buggies, or by animals such as horses, without  
4 taking reasonable precautions to limit excessive amounts of particulates from  
5 becoming airborne. Dust shall be kept to a minimum by using an approved dust  
6 suppressant, or adhesive soil stabilizer, or by paving, or by barring access  
7 to the property, or by other acceptable means.  
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10 R9-3-405. Roadways and streets

11 A. No person shall cause, suffer, allow or permit the use, repair, con-  
12 struction or reconstruction of a roadway or alley without taking reasonable pre-  
13 cautions to prevent excessive amounts of particulate matter from becoming  
14 airborne: Dust and other particulates shall be kept to a minimum by employing  
15 temporary paving, dust suppressants, wetting down, detouring or by other  
16 reasonable means.

17 B. No person shall cause, suffer, allow or permit transportation of  
18 materials likely to give rise to airborne dust without taking reasonable precau-  
19 tions, such as wetting, applying dust suppressants, or covering the load, to  
20 prevent particulate matter from becoming airborne. Earth or other material that  
21 is deposited by trucking or earth moving equipment shall be removed from paved  
22 streets.  
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25 R9-3-406. Material handling

-6 No person shall cause, suffer, allow or permit crushing, screening, handling,

1 transporting or conveying of materials or other operations likely to result  
2 in significant amounts of airborne dust without taking reasonable precautions,  
3 such as the use of spray bars, wetting agents, dust suppressants, covering  
4 the load, and hoods to prevent excessive amounts of particulate matter from  
5 becoming airborne.

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8 R9-3-407. Storage piles

9 A. No person shall cause, suffer, allow, or permit organic or inorganic  
10 dust producing material to be stacked, piled, or otherwise stored without tak-  
11 ing reasonable precautions such as chemical stabilization, wetting, or cover-  
12 ing to prevent excessive amounts of particulate matter from becoming airborne.

13 B. Stacking and reclaiming machinery utilized at storage piles shall be  
14 operated at all times with a minimum fall of material and in such manner, or  
15 with the use of spray bars and wetting agents, as to prevent excessive amounts  
16 or particulate matter from becoming airborne.

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19 R9-3-408. Mineral Tailings

20 No person shall cause, suffer, allow, or permit construction of mineral  
21 tailings piles without taking reasonable precautions to prevent particulate  
22 matter from becoming airborne. Reasonable precautions shall mean wetting,  
23 chemical stabilization, revegetation and such other measures as are approved  
24 by the Director.

1 R9-3-409. Agricultural practices

2 No person shall cause, suffer, allow or permit the performance of agri-  
3 cultural practices including but not limited to tilling of land and application  
4 of fertilizers without taking reasonable precautions to prevent excessive  
5 amounts of particulate matter from becoming airborne.  
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8 R9-3-410. Evaluation of non-point source emissions

9 Opacity of an emission from any non-point source shall not be greater  
10 than 40 percent measured in accordance with the Arizona Testing Manual, Re-  
11 ference method 9. Open fires permitted under R9-3-402 and R9-3-403 are  
12 exempt from this requirement.  
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1                   ARTICLE 5. EXISTING STATIONARY POINT SOURCE PERFORMANCE STANDARDS

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4       R9-3-501. Visible emissions: general

5           A. Except as otherwise provided in these regulations relating to specific  
6 types of sources, the opacity of any plume or effluent shall not be greater than  
7 40 percent as determined by reference method 9 in the Arizona Testing Manual.

8           B. Where the presence of uncombined water is the only reason for the  
9 exceedance of any visible emissions requirements in these regulations, such  
10 exceedance shall not constitute a violation of these regulations.

11           C. Upon written application to the Director, a person owning or operating  
12 an air pollution source may request that a visible emissions evaluation be con-  
13 ducted by the Bureau during a particulate emissions test demonstrating compliance  
14 with a particulate emission standard. The visible emissions opacity during a  
15 particulate emission test demonstrating compliance shall, if greater than the  
16 opacity standard of subsection A., serve as the visible emissions standard for  
17 the source. Such visible emissions standard shall be incorporated as a condition  
18 of the operating permit for the air pollution source.

19           D. Application for subsections A. and B. of this section shall be stayed  
20 only with regard to existing copper smelters operating pursuant to a conditional  
21 operating permit on March 5, 1977 for a period ending not later than July 1, 1979.

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23  
24       R9-3-502. Unclassified sources

25           A. No major existing stationary source which is not otherwise covered under  
26 any other section of these regulations shall cause or permit the emission of air

1 contaminants at rates greater than the following:

2 1. No person shall cause, suffer, allow or permit the discharge of  
3 particulate matter into the atmosphere from any emission point in any one hour  
4 from any unclassified process source outside the Phoenix-Tucson Air Quality  
5 Control Region in total quantities in excess of the amounts calculated by the  
6 equations set forth below.

7 a. For process sources having a process weight rate of 60,000 pounds per  
8 hour (30 tons per hour) or less, the maximum allowable emissions shall be  
9 determined by the following equation:

$$10 \quad E = 4.10P^{0.67}$$

11 where:

12 E = the maximum allowable particulate emissions rate in pounds-mass per  
13 hour.

14 P = the process weight rate in tons-mass per hour.

15 b. For process sources having a process weight rate greater than 60,000  
16 pounds per hour (30 tons per hour), the maximum allowable emissions shall be  
17 determined by the following equation:

$$18 \quad E = 55.0P^{0.11} - 40$$

19 where "E" and "P" are defined as indicated in subparagraph A.1.a. of this  
20 section.

21 2. No person shall cause, suffer, allow or permit the discharge of  
22 particulate matter into the atmosphere from any emission point in any one hour  
23 from any unclassified process source located in the Phoenix-Tucson Air Quality  
24 Control Region in total quantities in excess of the amount calculated by the  
25 equations set forth below.

26 a. For process sources having a process weight rate of 60,000 pounds per

hour (30 tons per hour) or less, the maximum allowable emissions shall be determined by the following equation:

$$E = 3.59p^{0.62}$$

where:

E = the maximum allowable particulate emissions rate in pounds-mass per hour.

b. For process industries having a process weight rate greater than 60,000 pounds per hour (30 tons per hour), the maximum allowable emissions shall be determined by the following equation:

$$E = 17.31p^{0.16}$$

where "E" and "P" are defined as indicated in subparagraph A.1.a. of this section.

c. For reference only, the equations in paragraphs A.1. and A.2. of this section are plotted in Appendix 11, Figure 2. The emission values obtained from the graph are approximately correct for the process weight rates shown. However, the actual values shall be calculated from the applicable equations and rounded off to two decimal places.

3. Sulfur dioxide - 600 parts per million.

4. Nitrogen oxides expressed as  $\text{NO}_2$  - 500 parts per million.

B. No person shall emit gaseous or odorous materials from equipment, operations or premises under his control in such quantities or concentrations as to cause air pollution.

C. No person shall operate or use any machine, equipment or other contrivance for the treatment or processing of animal or vegetable matter, separately or in combination, unless all gaseous vapors and gas entrained effluents from such operations, equipment or contrivance have been:

1. Incinerated to destruction as a temperature of not less than 1,200

1 degrees Fahrenheit, or,

2 2. Passed through such other device which is designed, installed and  
3 maintained to prevent the emission of odors or other air contaminants and  
4 which is approved by the Director.

5 D. Materials including, but not limited to, solvents or other volatile  
6 compounds, paints, acids, alkalies, pesticides, fertilizers and manure shall  
7 be processed, stored, used and transported in such a manner and by such means  
8 that they will not unreasonably evaporate, leak, escape or be otherwise  
9 discharged into the ambient air so as to cause or contribute to air  
10 pollution; and where means are available to reduce effectively the contribution  
11 to air pollution from evaporation, leakage or discharge, the installation and use  
12 of such control methods, devices, or equipment shall be mandatory.

13 E. Where a stack, vent or other outlet is at such a level that fumes,  
14 gas mist, odor, smoke, vapor or any combination thereof constituting air  
15 pollution are discharged to adjoining property, the Director may require the  
16 installation of abatement equipment or the alteration of such stack, vent or  
17 other outlet by the owner or operator thereof to a degree that will adequately  
18 dilute, reduce or eliminate the discharge of air pollution to adjoining property.

19 F. No person shall allow hydrogen sulfide to be emitted from any location  
20 in such manner and amount that the concentration of such emissions into the  
21 ambient air at any occupied place beyond the premises on which the source is  
22 located exceeds 0.03 parts per million by volume for any averaging period of  
23 30 minutes or more.

24 G. No person shall cause, suffer, allow or permit discharge from any  
25 stationary source carbon monoxide emissions without the use of complete secondary  
26 combustion of waste gases generated by any process source.

1 R9-3-503. Standards of performance for existing fossil-fuel fired steam  
2 generators and general fuel burning equipment

3 A. This section applies to installations in which fuel is burned for the  
4 primary purpose of producing power, steam, hot water, hot air or other liquids,  
5 gases or solids and in the course of doing so the products of combustion do not  
6 come into direct contact with process materials. When any products or byproducts  
7 of a manufacturing process are burned for the same purpose or in conjunction  
8 with any fuel, the same maximum emission limitation shall apply, except for wood  
9 waste burners as regulated under section R9-3-504.

10 B. For purposes of this section, the heat input shall be the aggregate  
11 heat content of all fuels whose products of combustion pass through a stack or  
12 other outlet. The heat content of solid fuel shall be determined in accordance  
13 with R9-3-310.B. The heat input value used shall be the equipment manufacturer's  
14 or designer's guaranteed maximum input, whichever is greater. The total heat  
15 input of all fuel-burning units on a plant or premise shall be used for  
16 determining the maximum allowable amount of gaseous or particulate matter  
17 which may be emitted.

18 C. The provisions of this section are applicable to fossil-fuel fired  
19 steam generating units or general fuel burning equipment which are existing  
20 or for which construction or major alteration has commenced prior to the  
21 effective date of this section; or which are of less than 73 megawatts capacity.

22 1. The standard for particulate matter under this section is:

23 a. No person shall cause, suffer, allow or permit the emission of  
24 particulate matter, caused by combustion of fuel, from any fuel-burning  
25 operation subject to the provisions of this section in excess of the amounts  
26 calculated by the equations presented below:

1           i. For equipment having a heat input rate of 4200 million Btu per hour  
2 or less, the maximum allowable emissions shall be determined by the following  
3 equation:

$$4 \qquad E = 1.02Q^{0.769}$$

5 where:

6           E = the maximum allowable particulate emissions rate in pounds-mass per  
7 hour.

8           Q = the heat input in million Btu per hour.

9           ii. For equipment having a heat input rate greater than 4200 million Btu/hr,  
10 the maximum allowable emissions shall be determined by the following equation:

$$11 \qquad E = 17.0Q^{0.432}$$

12 where "E" and "Q" have the same meanings as in subdivision i. above.

13           b. For reference purposes only, the two equations in subparagraph C.1.a.  
14 are plotted in Appendix 11, Figure 1. The emission values obtained from the  
15 graph are approximately correct for the heat input rates shown. However, the  
16 actual values shall be calculated from the applicable equations and rounded  
17 off to two decimal places.

18           2. The standard for sulfur dioxide under this section is:

19           a. Existing fuel burning equipment or steam power generating installations  
20 which commenced construction or a major alteration prior to May 30, 1972 shall  
21 not emit more than 1.0 pounds sulfur dioxide maximum three hour average, per  
22 million Btu (430 nanograms per joule) heat input when low sulfur oil is fired,

23           b. Existing fuel burning equipment or steam power generating installations  
24 which commenced construction or a major alteration after May 30, 1972 shall not  
25 emit more than 0.80 pounds of sulfur dioxide maximum three hour average per  
26 million Btu (340 nanograms per joule) heat input when low sulfur oil is fired.

1 C. All existing steam power generating and general fuel burning installations  
2 which are subject to the provisions of this section shall not emit more than 2.2  
3 pounds of sulfur dioxide maximum three-hour average per million Btu (946 nanograms  
4 per joule) heat input when high sulfur oil is fired.

5 d. Existing general fuel burning equipment and steam power generating  
6 installations which commenced construction or a major alteration prior to May 30,  
7 1972 shall not emit more than 1.0 pounds of sulfur dioxide maximum three-hour  
8 average, per million Btu (430 nanograms per joule) heat input when solid fuel  
9 is fired.

10 e. Existing general fuel burning equipment and steam power generating  
11 installations which commenced construction or major alteration after May 30, 1972  
12 shall not emit more than 0.80 pounds, maximum three-hour average, per million  
13 Btu (340 nanograms per joule) heat input when solid fuel is fired.

14 f. Any permit issued for the operation of an existing source, or any  
15 renewal or modification of such a permit, shall include a condition prohibiting  
16 the use of high sulfur oil by the permittee, unless the applicant demonstrates  
17 to the satisfaction of the Director that sufficient quantities of low sulfur  
18 oil are not available for use by the source, and that it has adequate facilities  
19 and contingency plans to insure that the sulfur dioxide ambient air quality  
20 standards set forth in section R9-3-202, will not be violated. The terms of the  
21 permit may authorize the use of high sulfur oil under such conditions as are  
22 justified. In cases where the permittee is authorized to use high sulfur oil  
23 it shall submit to the department monthly reports detailing its efforts to obtain  
24 low sulfur oil. When the conditions justifying the use of high sulfur oil no  
25 longer exist, the permit shall be modified accordingly. Nothing in this section  
26 shall be construed as allowing the use of a supplementary control system or other

1 form of dispersion technology.

2 g. For purposes of this regulation low sulfur oil means fuel oil containing  
3 less than 0.90 percent by weight of sulfur and high sulfur oil means fuel oil  
4 containing 0.90 percent or more by weight of sulfur.

5 3. Existing steam power generating installations which commenced construction  
6 or a major alteration after May 30, 1972 shall not emit nitrogen oxides in excess  
7 of the following amounts.

8 a. 0.20 pounds of nitrogen oxides, maximum three-hour average, calculated  
9 as nitrogen dioxide, per million Btu heat input when gaseous fossil fuel is  
10 fired.

11 b. 0.30 pounds of nitrogen oxides, maximum three-hour average, calculated  
12 as nitrogen dioxide, per million Btu heat input when liquid fossil fuel is fired.

13 c. 0.70 pounds of nitrogen oxides, maximum three-hour average, calculated as  
14 nitrogen dioxide, per million Btu heat input when solid fossil fuel is fired.

15 4. Emission and fuel monitoring systems where deemed necessary by the  
16 Director for sources subject to the provisions of this section shall conform to  
17 the requirements of section R9-3-313.

18 5. The reference methods given in the Arizona Testing Manual shall be used  
19 to determine compliance with the standards as prescribed in paragraphs C.1, and  
20 C.2. of this section.

21  
22  
23 R9-3-504. Standards of performance for incinerators

24 A. The provisions of this section are applicable to all incinerators which  
25 were existing or for which construction commenced on or before the effective date  
26 of this section.

1           1. Notwithstanding the provisions of section R9-3-501., no person shall  
2 cause, suffer, allow or permit to be emitted into the atmosphere, from any type  
3 of incinerator, smoke, fumes, gases, particulate matter or other gas-borne  
4 material which exceeds 20 percent opacity except during the times specified in  
5 paragraph A.4. of this section.

6           2. No person shall cause, suffer, allow or permit to be emitted into the  
7 atmosphere from any emission point from any incinerator, or to pass a convenient  
8 measuring point near such emission point, particulate matter of concentrations  
9 in excess of the following limits:

10          a. For multiple chamber incinerators, controlled atmosphere incinerators,  
11 fume incinerators, afterburners or other unspecified types of incinerators,  
12 emissions shall not exceed 0.1 grain per cubic foot, based on dry flue gas at  
13 standard conditions, corrected to 12 percent carbon dioxide.

14          b. For wood waste burners other than air curtain destructors, emissions  
15 discharged from the stack or burner top opening shall not exceed 0.2 grain per  
16 cubic foot, based on dry flue gas at standard conditions, corrected to 12  
17 percent carbon dioxide.

18          c. For air curtain destructors, emissions discharged from the pit opening  
19 shall not exceed 0.5 grain per dry standard cubic foot corrected to 12 percent  
20 carbon dioxide. Air curtain destructors shall not be used within 500 feet of  
21 the nearest dwelling.

22           3. The amount of particulate matter emitted shall be determined by test  
23 methods and procedures as stated in subsection C. of this section. Test methods  
24 may be modified, adjusted or added to by the Director to suit specific sampling  
25 conditions or needs and shall be based on good engineering practice, judgment  
26 and experience.

1           4. Incinerators shall be exempt from the above opacity and emission  
2 requirements as follows:

3           a. For multiple chamber incinerators, controlled atmosphere incinerators,  
4 fume incinerators, afterburners or other unspecified types of incinerators, such  
5 exemption shall be for not more than 30 seconds in any 60 minute period.

6           b. Wood waste burners and air curtain destructors shall be exempt as  
7 follows:

8           i. For a period once each day for the purpose of building a new fire but  
9 not to exceed 60 minutes.

10           ii. For an upset of operations not to exceed 3 minutes in any 60 minute  
11 period.

12           B. The owner or operator of any incinerator subject to the provisions of  
13 this section shall record the daily charging rates and hours of operation.

14           C. The test methods and procedures required by this section are as follows:

15           1. The reference methods in the Arizona Testing Manual, shall be used to  
16 determine compliance with the standard prescribed in subsection A. of this  
17 section as follows:

18           a. Method 5 for the concentration of particulate matter and the associated  
19 moisture content;

20           b. Method 1 for sample and velocity traverses;

21           c. Method 2 for velocity and volumetric flow rate; and

22           d. Method 3 for gas analysis and calculation of excess air, using the  
23 integrated sample technique.

24           2. For Method 5, the sampling time for each run shall be at least 60 minutes  
25 and the minimum sample volume shall be 0.85 dscm (30.0 dscf) except that smaller  
26 sampling times or sample volumes, when necessitated by process variables or other

1 factors, may be approved by the Director,

2  
3  
4 R9-3-505. Standards of performance for existing portland cement plants

5 A. The provisions of this section are applicable to the following affected  
6 facilities in portland cement plants: kiln, clinker cooler, raw mill system,  
7 finish mill system, raw mill dryer, raw material storage, clinker storage,  
8 finished product storage, conveyor transfer points, bagging and bulk loading  
9 and unloading systems.

10 B. The provisions of this section are applicable to all cement plants  
11 under State of Arizona jurisdiction which were existing sources or for which  
12 construction commenced on or before the effective date of this section.

13 1. No person shall cause, suffer, allow or permit the discharge of  
14 particulate matter from the kilns of any existing cement plant subject to the  
15 provisions of this section and located in the Phoenix-Tucson Air Quality Control  
16 Region which is:

17 a. In excess of 0.30 pounds per ton of feed to the kilns, maximum two-hour  
18 average.

19 b. Greater than 20 percent opacity.

20 2. No person shall cause, suffer, allow or permit the discharge of  
21 particulate matter from the clinker cooler of any existing plant located in the  
22 Phoenix-Tucson Air Quality Control Region which is:

23 a. In excess of 0.10 pounds per ton of feed to the kilns, maximum two-hour  
24 average.

25 b. Ten percent opacity or greater.

26 3. Other existing cement plant facilities within the Phoenix-Tucson Air

1 Quality Control Region shall meet the requirements of subsection A. of section  
2 R9-3-502. Unclassified sources, and shall not exceed 20 percent opacity.

3 4. Cement plants subject to the provisions of this section and outside the  
4 Phoenix-Tucson Air Quality Control Region shall not emit from any equipment  
5 particulate matter which is greater than 40 percent opacity or exceeds the amounts  
6 allowable under the following:

7 a. For process sources having a process weight rate of 60,000 pounds per  
8 hour (30 tons per hour) or less, the maximum allowable emissions shall be  
9 determined by the following equation:

$$10 \quad E = 4.10P^{0.67}$$

11 where:

12 E = the maximum allowable particulate emissions rate in pounds-mass per  
13 hour.

14 P = the process weight rate in tons-mass per hour.

15 b. For process sources having a process weight rate greater than 60,000  
16 pounds per hour (30 tons per hour), the maximum allowable emissions shall be  
17 determined by the following equation:

$$18 \quad E = 55.0P^{0.11} - 40$$

19 where "E" and "P" are defined as indicated in subparagraph B.4.a.

20 5. No person shall cause, suffer, allow or permit discharge into the  
21 atmosphere of an amount in excess of six pounds of sulfur oxides, calculated as  
22 sulfur dioxide, per ton cement kiln feed from cement plants subject to the  
23 provisions of this section.

24 C. The owner or operator of any portland cement plant subject to the  
25 provisions of this section shall record the daily production rates and the kiln  
26 feed rates.

1 D. The test methods and procedures required by this section are as follows:  
2 1. The reference methods in the Arizona Testing Manual, except as provided  
3 for in section R9-3-312. shall be used to determine compliance with the standards  
4 prescribed in subsection B. of this section as follows:  
5 a. Method 5 for the concentration of particulate matter and the associated  
6 moisture content;  
7 b. Method 1 for sample and velocity traverses;  
8 c. Method 2 for velocity and volumetric flow rate; and  
9 d. Method 3 for gas analysis.  
10 2. For Method 5, the minimum sampling time and minimum sample volume for  
11 each run, except when process variables or other factors justifying otherwise to  
12 the satisfaction of the Director, shall be as follows:  
13 a. 60 minutes and 0.85 dscm (30.0 dscf) for the kiln,  
14 b. 60 minutes and 1.15 dscm (40.6 dscf) for the clinker cooler.  
15 3. Total kiln feed rate (except fuels), expressed in metric tons per hour  
16 on a dry basis, shall be determined during each testing period by suitable  
17 methods; and shall be confirmed by a material balance over the production system.  
18 4. For each run, particulate matter emissions, expressed in g/metric ton  
19 of kiln feed, shall be determined by dividing the emission rate in g/hr by the  
20 kiln feed rate. The emission rate shall be determined by the equation,  $g/hr =$   
21  $Q_s \times c$ , where  $Q_s$  - volumetric flow rate of the total effluent in dscm/hr as  
22 determined in accordance with subparagraph D.1.c. of this section, and  $c =$   
23 particulate concentration in g/dscm as determined in accordance with subparagraph  
24 D.1.a. of this section.

1 R9-3-506. Standards of performance for existing nitric acid plants

2 A. The standard for nitrogen oxides for nitric acid plants which commenced  
3 construction or a major alteration prior to the effective date of this section  
4 is:

5 1. No person shall cause, suffer, allow or permit discharge from any  
6 existing source nitric acid plant producing weak nitric acid, which is 30 to 70  
7 percent in strength by either the increased pressure or atmospheric pressure  
8 process, of more than 7.75 kg of total oxides of nitrogen per metric ton (5.5  
9 lbs/ton) of acid produced maximum two-hour average, expressed as nitrogen  
10 dioxide.

11 2. The opacity of any plume subject to the provisions of this section shall  
12 not exceed 10 percent.

13 B. Emissions monitoring required by this section is as follows:

14 1. A continuous monitoring system for the measurement of nitrogen oxides  
15 shall be installed, calibrated, maintained and operated by the owner or operator,  
16 in accordance with section R9-3-313.

17 C. The test methods and procedures required by this section are as follows:

18 1. The reference methods in the Arizona Testing Manual shall be used to  
19 determine compliance with the standard prescribed in subsection B. of this section  
20 as follows:

- 21 a. Method 7 for the concentration of  $\text{NO}_x$ ;
- 22 b. Method 1 for sample and velocity traverses;
- 23 c. Method 2 for velocity and volumetric flow rate; and
- 24 d. Method 3 for gas analysis.

25 2. For Method 7, the sample site shall be selected according to Method 1  
26 and the sampling point shall be the centroid of the stack or duct or at a point

1 no closer to the walls than 1 m (3.28 ft). Each run shall consist of at least  
2 four grab samples taken at approximately 15-minute intervals. The arithmetic  
3 mean of the samples shall constitute the run value. A velocity traverse shall  
4 be performed once per run.

5 3. Acid production rate, expressed in metric tons per hour of 100 percent  
6 nitric acid, shall be determined during each testing period by suitable methods  
7 and shall be confirmed by a material balance over the production system.

8 4. For each run, nitrogen oxides, expressed in g/metric ton of 100 percent  
9 nitric acid, shall be determined by dividing the emission rate in g/hr by the  
10 acid production rate. The emission rate shall be determined by the equation:

$$11 \quad g/hr = Q_s \times c$$

12 where  $Q_s$  = volumetric flow rate of the effluent in dscm/hr, as determined in  
13 accordance with subparagraph C.1.c of this section, and  $c$  =  $NO_x$  concentration  
14 in g/dscm, as determined in accordance with subparagraph C.1.a. of this section.  
15  
16

17 R9-3-507. Standards of performance for existing sulfuric acid plants

18 A. The provisions of this section are applicable to all non-metallurgical  
19 sulfuric acid plants under State of Arizona jurisdiction for which construction  
20 or a major alteration commenced on or before the effective date of this section.

21 B. No person shall cause, suffer, allow or permit discharge into the  
22 atmosphere of more than 1 kg of sulfur dioxide per metric ton (4 lbs/ton) of  
23 sulfuric acid produced (calculated as 100 percent  $H_2SO_4$ ), maximum two-hour  
24 average, from facilities that produce sulfuric acid by the contact process by  
25 burning elemental sulfur, alkylation acid, hydrogen sulfide, organic sulfide and  
mercaptans or acid sludge.

1 C. No person shall cause, suffer, allow or permit discharge into the  
2 atmosphere of more than 0.075 kg of sulfuric acid mist per metric ton (0.15 lbs/  
3 ton) of sulfuric acid produced (calculated as 100 percent  $H_2SO_4$ ), maximum two-  
4 hour average, expressed as  $H_2SO_4$ , from facilities that produce sulfuric acid by  
5 the contact process by burning elemental sulfur, alkylation acid, hydrogen sulfide,  
6 organic sulfides and mercaptans or acid sludge.

7 D. This regulation shall not apply to metallurgical plants or other  
8 facilities where conversion to sulfuric acid is utilized as a means of controlling  
9 emissions to the atmosphere of sulfur dioxide or other sulfur compounds.

10 E. Emissions monitoring required by this section is as follows:

11 1. A continuous monitoring system for the measurement of sulfur dioxide  
12 shall be installed, calibrated, maintained and operated by the owner or operator,  
13 in accordance with section R9-3-313.

14 F. The test methods and procedures required by this section are as follows:

15 1. The reference methods in the Arizona Testing Manual shall be used to  
16 determine compliance with standards prescribed in subsections B. and C. of this  
17 section as follows:

- 18 a. Method 8 for concentration of  $SO_2$  and acid mist;
- 19 b. Method 1 for sample and velocity traverses;
- 20 c. Method 2 for velocity and volumetric flow rate; and
- 21 d. Method 3 for gas analysis.

22 2. The moisture content can be considered to be zero. For Method 8 the  
23 sampling time for each run shall be at least 60 minutes and the minimum sample  
24 volume shall be 1.15 dscm (40.6 dscf) except that smaller sampling times or  
25 sample volumes, when necessitated by process variables or other factors, may be  
approved by the Director.

1           3. Acid production rate, expressed in metric tons per hour of 100 percent  
2  $H_2SO_4$ , shall be determined during each testing period by suitable methods and  
3 shall be confirmed by a material balance over the production system.

4           4. Acid mist and sulfur dioxide emissions, expressed in g/metric ton of  
5 100 percent  $H_2SO_4$ , shall be determined by dividing the emission rate in g/hr by  
6 the acid production rate. The emission rate shall be determined by the equation,  
7  $g/hr = Q_s \times c$ , where  $Q_s$  = volumetric flow rate of the effluent in dscm/hr as  
8 determined in accordance with subparagraph F.1.c. of this section, and  $c$  = acid  
9 mist and  $SO_2$  concentrations in g/dscm as determined in accordance with subparagraph  
10 F.1.a. of this section.

11  
12  
13 R9-3-508. Standards of performance for existing asphalt concrete plants

14       A. For the purpose of this section an asphalt concrete plant is comprised  
15 only of any combination of the following: Dryer, systems for screening, handling,  
16 storing and weighing hot aggregate, systems for loading, transferring and storing  
17 mineral filler; systems for mixing asphalt concrete; and the loading, transferring  
18 and storage systems associated with emission control systems. Drum dryer plants,  
19 wherein the asphalt is introduced into the dryer, are included hereunder.

20       B. Fixed asphalt plants or portable asphalt plants which have commenced  
21 construction or a major alteration on or before the effective date of this  
22 section shall meet the standards set forth in this section. Owner or operator  
23 shall submit proof of prior use to the Director.

24       1. No person shall cause, suffer, allow or permit the discharge of  
25 particulate matter into the atmosphere from any emission point in any one hour  
26 from any existing asphalt plant located in any part of the State of Arizona,

1 other than the Phoenix-Tucson Air Quality Control Region in total quantities in  
2 excess of the amounts calculated by the equations set forth below:

3 a. For process sources having a process weight rate of 60,000 pounds per  
4 hour (30 tons per hour) or less, the maximum allowable emissions shall be  
5 determined by the following equation:

$$6 \quad E = 4.10P^{0.67}$$

7 where:

8 E = the maximum allowable particulate emission rate in pounds-mass per hour.

9 P = the process weight rate in tons-mass per hour.

10 b. For process sources having a process weight rate greater than 60,000  
11 pounds per hour (30 tons per hour), the maximum allowable emissions shall be  
12 determined by the following equation:

$$13 \quad E = 55.0P^{0.11} - 40$$

14 where "E" and "P" are defined as indicated in subparagraph B.1.a. of this section.

15 2. No person shall cause, suffer, allow or permit the discharge of particulate  
16 matter into the atmosphere from any emission point in any one hour from any  
17 existing asphalt plant located in the Phoenix-Tucson Air Quality Control Region  
18 in total quantities in excess of the amount calculated by the equations set forth  
19 below.

20 a. For process sources having a process weight rate of 60,000 pounds per  
21 hour (30 tons per hour) or less, the maximum allowable emissions shall be  
22 determined by the following equation:

$$23 \quad E = 3.59P^{0.62}$$

24 where:

25 E = the maximum allowable particulate emissions rate in pounds-mass per hour.

26 P = the process weight rate in tons-mass per hour.

1           b. For process sources having a process weight rate greater than 60,000  
2 pounds per hour (30 tons per hour), the maximum allowable emissions shall be  
3 determined by the following equation:

$$4 \qquad \qquad \qquad E = 17.31P^{0.16}$$

5 where "E" and "P" are defined as indicated in subparagraph B.2.a. of this section.

6           3. For reference purposes only, the equations given above are plotted in  
7 Figure 2, Appendix 11. The emission values obtained from the graph are approxi-  
8 mately correct for the process weight rates shown. However, the actual values  
9 shall be calculated from the applicable equations and rounded off to two decimal  
10 places.

11           4. Nothing in this regulation shall be construed to prohibit the Director  
12 from issuing an installation or operating permit for an asphalt plant which will  
13 not operate in compliance with paragraph B.2. of this section provided that the  
14 plant will operate in compliance with paragraph B.1. of this section and the  
15 permit contains a condition prohibiting the operation of the plant in the Phoenix-  
16 Tucson Air Quality Control Region.

17           5. The standard for sulfur in fuel under this section is:

18           a. Liquid fuel containing greater than 0.9 percent sulfur by weight shall  
19 not be utilized for asphalt plants subject to this section.

20           b. Solid fuel containing greater than 0.5 percent sulfur by weight shall  
21 not be utilized for asphalt plants subject to this section.

22           c. The test methods and procedures required under this section are;

23           1. The referenced methods given in the Arizona Testing Manual shall be used  
24 to determine compliance with the standards prescribed in subsection B, of this  
25 section.

26           a. Method 5 for the concentration of particulate matter and the associated

1 moisture content;

2 b. Method 1 for sample and velocity traverses;

3 c. Method 2 for velocity and volumetric flow rate; and

4 d. Method 3 for gas analysis.

5 2. For Method 5, the sampling time for each run shall be at least 60  
6 minutes and the sampling rate shall be at least 0.9 dscm/hr (0.53 dscf/min)  
7 except that shorter sampling times, when necessitated by process variables or  
8 other factors, may be approved by the Director.

9 3. Percent sulfur in liquid fuel shall be determined by ASTM method  
10 D-129-64, and the percent sulfur in solid fuel shall be determined by ASTM  
11 method D-3177-73.

12  
13  
14 R9-3-509. Standards of performance for existing petroleum refineries

15 A. The provisions of this section are applicable to the following affected  
16 facilities in petroleum refineries: fluid catalytic cracking unit catalyst  
17 regenerators, fluid catalytic cracking unit incinerator-waste heat boilers, and  
18 fuel gas combustion devices. All existing petroleum refineries as of the  
19 effective date of this section are subject to the provisions of section R9-3-808.

20  
21  
22 R9-3-510. Standards of performance for existing storage vessels for petroleum  
23 liquids

24 A. Storage vessels under State of Arizona jurisdiction for which construction  
25 or major alteration was commenced on or before the effective date of this section  
26 shall meet the following standards:

1           1. No person shall place, store or hold in any reservoir, stationary tank  
2 or other container having a capacity of 65,000 (245,000 liters) or more gallons  
3 any petroleum liquid having a vapor pressure of 2.0 pounds per square inch  
4 absolute or greater under actual storage conditions, unless such tank, reservoir  
5 or other container is a pressure tank maintaining working pressure sufficient at  
6 all times to prevent hydrocarbon vapor or gas loss to the atmosphere or is equipped  
7 with one of the following vapor loss control devices, properly installed, in good  
8 working order and in operation:

9           a. A floating roof consisting of a pontoon type double-deck type roof  
10 resting on the surface of the liquid contents and equipped with a closure seal  
11 to close the space between the roof eave and tank well, a vapor balloon or vapor  
12 dome, designed in accordance with accepted standards of the petroleum industry.  
13 The control equipment shall not be used if the petroleum liquid has a vapor pressure  
14 of 12 pounds per square inch absolute or greater under actual storage conditions.  
15 All tank gauging and sampling devices shall be gas-tight except when gauging or  
16 sampling is taking place.

17           b. Other equipment proven to be of equal efficiency for preventing discharge  
18 of hydrocarbon gases and vapors to the atmosphere.

19           2. Any other petroleum liquid storage tank shall be equipped with a submerged  
20 filling device or acceptable equivalent for the control of hydrocarbon emissions.

21           B. All facilities for dock loading of petroleum products, having a vapor  
22 pressure of 1.5 pounds per square inch absolute or greater at loading pressure,  
23 shall provide for submerged filling or acceptable equipment for control of  
24 hydrocarbon emissions.

25           C. All pumps and compressors which handle volatile organic compounds shall  
26 be equipped with mechanical seals or other equipment of equal efficiency to

1 prevent the release of organic contaminants into the atmosphere.

2 D. The monitoring of operations required by this section is as follows:

3 1. The owner or operator of any petroleum liquid storage vessel to which  
4 this section applies shall for each such storage vessel maintain a file of each  
5 type of petroleum liquid stored, of the typical Reid vapor pressure of each  
6 type of petroleum liquid stored and of dates of storage. Dates on which the  
7 storage vessel is empty shall be shown.

8 2. The owner or operator of any petroleum liquid storage vessel to which  
9 this section applies shall for such storage vessel determine and record the  
10 average monthly storage temperature and true vapor pressure of the petroleum  
11 liquid stored at such temperature if;

12 a. The petroleum liquid has a true vapor pressure, as stored, greater than  
13 26 mm Hg (0.5 psia) but less than 78 mm Hg (1.5 psia) and is stored in a  
14 storage vessel other than one equipped with a floating roof, a vapor recovery  
15 system or their equivalents; or

16 b. The petroleum liquid has a true vapor pressure as stored, greater than  
17 470 mm Hg (9.1 psia) and is stored in a storage vessel other than one equipped  
18 with a vapor recovery system or its equivalent.

19 3. The average monthly storage temperature is an arithmetic average  
20 calculated for each calendar month, or portion thereof, if storage is for less  
21 than a month, from bulk liquid storage temperatures determined at least once  
22 every seven days.

23 4. The true vapor pressure shall be determined by the procedures in American  
24 Petroleum Institute Bulletin 2517. This procedure is dependent upon determination  
25 of the storage temperature and the Reid vapor pressure, which requires sampling  
26 of the petroleum liquids in the storage vessels. Unless the Director requires in

1 specific cases that the stored petroleum liquid be sampled, the true vapor  
2 pressure may be determined by using the average monthly storage temperature and  
3 the typical Reid vapor pressure. For those liquids for which certified  
4 specifications limiting the Reid vapor pressure exist, the Reid vapor pressure  
5 may be used. For other liquids, supporting analytical data must be made available  
6 upon request to the Director when typical Reid vapor pressure is used.

7 E. Gasoline volatility testing and control program.

8 1. This regulation states the required properties of gasoline at the time  
9 and place of delivery in bulk in accordance with ASTM designation: D-439-70,  
10 standard specification for gasoline. For purposes of this regulation, "in bulk"  
11 means gasoline transferred or stored prior to delivery to a retail seller.

12 2. Automatic variation by the seller is provided to meet the requirements  
13 of seasonal changes in temperature, depending upon the season and the locality  
14 in which the product is to be used. This is done by providing four volatility  
15 grades, A., B., C. and D., as defined in D-439-70, and differentiating the use  
16 of these grades according to the months of the year.

17 3. The requirements enumerated in this regulation are based upon vapor  
18 pressure and shall be determined by ASTM designation: D-323-58, standard method  
19 of test for vapor pressure of petroleum products (Reid Method). This method of  
20 test covers the determination of the absolute vapor pressure of volatile crude  
21 oil and volatile non-viscous petroleum products except liquified petroleum gases.

22 4. The seasonal distribution of the four grades of gasoline (A., B., C.  
23 and D.) shall conform to the schedule in Table 2 of D-439-70 as follows:  
24  
25  
26

1	Month	Jan.	Feb.	March	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
2	Grade	D/C	C	C/B	B	B/A	A	A	A	A	A/B	B/C	C/D
3	Reid												
4	Vapor	13.5	11.5	11.5	10.0	10.0	9.0	9.0	9.0	9.0	9.0	10.0	11.5
5	Pressure	or		or		or					or	or	or
6	PSIG, Max	11.5		10.0		9.0					10.0	11.5	13.5

7           5. Where alternative grades are permitted, the option shall be exercised by  
8 the seller.

11 R9-3-511. Standards of performance for existing secondary lead smelters

12           A. This section shall be applicable to all secondary lead smelters for  
13 which major alteration or construction was commenced on or before the effective  
14 date of this section.

15           1. No person shall cause, suffer, allow or permit the discharge of particu-  
16 late matter into the atmosphere from any emission point in any one hour from any  
17 existing secondary lead smelter subject to the provisions of this section, in  
18 total quantities in excess of the amounts calculated by the equations set forth  
19 below.

20           a. For process sources having a process weight rate of 60,000 pounds per  
21 hour (30 tons per hour) or less, the maximum allowable emissions shall be  
22 determined by the following equation:

$$E = 3.59P^{0.62}$$

24 where:

25           E = the maximum allowable emission rate in pounds-mass per hour.

26           P = the process weight rate in tons-mass per hour.

1           b. For process sources having a process weight rate greater than 60,000  
2 pounds per hour (30 tons per hour), the maximum allowable emissions shall be  
3 determined by the following equation:

$$4 \qquad \qquad \qquad E = 17.31P^{0.16}$$

5 where "E" and "P" are defined as indicated in subparagraph A.1.a. of this section.

6           2. For reference purposes only, the equations in subparagraphs A.1.a. and  
7 A.1.b. are plotted in Figure 2, Appendix 11. The emission values obtained from  
8 the graph are approximately correct for the process weight rates shown. However,  
9 the actual values shall be calculated from the applicable equations and rounded  
10 off to two decimal places.

11           3. The opacity of emissions subject to the provisions of this section shall  
12 not exceed 20 percent.

13           B. The test methods and procedures required by this section are as follows:

14           1. The reference methods set forth in the Arizona Testing Manual shall be  
15 used to determine compliance with the standards prescribed in subsection A. of  
16 this section as follows:

17           a. Method 5 for the concentration of particulate matter and the associated  
18 moisture content;

19           b. Method 1 for sample and velocity traverses;

20           c. Method 2 for velocity and volumetric flow rate; and

21           d. Method 3 for gas analysis.

22           2. For Method 5, the sampling time for each run shall be at least 60  
23 minutes and the sampling rate shall be at least 0.9 dscm/hr (0.53 dscf/min), except  
24 that shorter sampling times, when necessitated by process variables or other factors,  
25 may be approved by the Director. Particulate sampling shall be conducted during  
26 representative periods of furnace operation, including charging and tapping.

1 R9-3-512. Standards of performance for existing secondary brass and bronze  
2 ingot production plants

3 A. The standards set forth in this section are applicable to all secondary  
4 brass and bronze ingot production plants which are existing or for which major  
5 alteration or construction commenced on or before the effective date of this  
6 section.

7 1. No person shall cause, suffer, allow or permit the discharge of particu-  
8 late matter into the atmosphere from any emission point in any one hour from any  
9 secondary brass or bronze ingot production plant subject to the provisions of  
10 this section in total quantities in excess of the amount calculated by the  
11 equations set forth below.

12 a. For process sources having a process weight rate of 60,000 pounds per  
13 hour (30 tons per hour) or less, the maximum allowable emissions shall be  
14 determined by the following equation:

$$15 \quad E = 3.59P^{0.62}$$

16 where:

17 E = the maximum allowable particulate emissions rate in pounds-mass per hour.

18 P = the process weight rate in tons-mass per hour.

19 b. For process sources having a process weight rate greater than 60,000  
20 pounds per hour (30 tons per hour), the maximum allowable emissions shall be  
21 determined by the following equation:

$$22 \quad E = 17.31P^{0.16}$$

23 where "E" and "P" are defined as indicated in subparagraph A.1.a. of this section.

24 2. For reference purposes only, the equations in subparagraphs A.1.a. and  
25 A.1.b. are plotted in Figure 2, Appendix 11. The emission values obtained from  
26 the graph are approximately correct for the process weight rates shown.

1 However, the actual values shall be calculated from the applicable equations  
2 and rounded off to two decimal places.

3 3. The opacity of emissions subject to the provisions of this section  
4 shall not exceed 20 percent.

5 B. The test methods and procedures required by this section are as follows:

6 a. The reference methods set forth in the Arizona Testing Manual shall be  
7 used to determine compliance with the standards prescribed in subsection A. of  
8 this section as follows:

9 1. Method 5 for the concentration of particulate matter and the associated  
10 moisture content;

11 2. Method 1 for sample and velocity traverses;

12 3. Method 2 for velocity and volumetric flow rate; and

13 4. Method 3 for gas analysis.

14 b. For Method 5, the sampling time for each run shall be at least 120  
15 minutes and the sampling rate shall be at least 0.9 dscm/hr (0.53 dscf/min)  
16 except that shorter sampling times, when necessitated by process variables or  
17 other factors, may be approved by the Director. Particulate matter sampling  
18 shall be conducted during representative periods of charging and refining, but  
19 not during pouring of the heat.

20  
21  
22 R9-3-513. Standards of performance for existing iron and steel plants

23 A. The standards set forth in this section are applicable to basic oxygen  
24 process furnaces under State of Arizona jurisdiction which are existing or for  
25 which major alteration or construction was commenced on or before the effective  
26 date of this section.

1           1. No person shall cause, suffer, allow or permit the discharge of  
2 particulate matter into the atmosphere from any emission point in any one hour  
3 from any basic oxygen process furnace subject to the provisions of this section  
4 in total quantities in excess of the amount calculated by the equations set  
5 forth below.

6           a. For process sources having a process weight rate of 60,000 pounds per  
7 hour (30 tons per hour) or less, the maximum allowable emissions shall be  
8 determined by the following equation:

$$9 \qquad \qquad \qquad E = 3.59P^{0.62}$$

10 where:

11           E = the maximum allowable particulate emissions rate in pounds-mass per  
12 hour.

13           P = the process weight rate in tons-mass per hour.

14           b. For process sources having a process weight rate greater than 60,000  
15 pounds per hour (30 tons per hour), the maximum allowable emissions shall be  
16 determined by the following equation:

$$17 \qquad \qquad \qquad E = 17.31P^{0.16}$$

18 where "E" and "P" are defined as indicated in subparagraph A.1.a. of this section.

19           2. For reference purposes only, the equations in subparagraphs A.1.a. and  
20 A.1.b. are plotted in Figure 2, Appendix 11. The emission values obtained from  
21 the graph are approximately correct for the process weight rates shown. However,  
22 the actual values shall be calculated from the applicable equations and rounded  
23 off to two decimal places.

24           3. The opacity of emissions subject to the provisions of this section shall  
25 not exceed 20 percent.

26           B. Monitoring of operations under this section is as follows;

1           1. The owner or operator of an affected facility shall maintain daily  
2 records of the time and duration of each steel production cycle.

3           2. The owner or operator of any affected facility that uses Venturi  
4 scrubber emission control equipment shall install, calibrate, maintain and  
5 continuously operate the following monitoring devices:

6           a. A monitoring device for the continuous measurement of the pressure loss  
7 through the Venturi construction of the control equipment. The monitoring device  
8 is to be certified by the manufacturer to be accurate within  $\pm 250$  pascals  
9 ( $\pm 1$  inch water).

10          b. A monitoring device for the continuous measurement of the water supply  
11 pressure to the control equipment. The monitoring device is to be certified by  
12 the manufacturer to be accurate within  $\pm 5$  percent of the design water supply  
13 pressure. The pressure sensor or tap must be located close to the water dis-  
14 charge point. The Director may be consulted for approval of alternative  
15 locations for the pressure sensor or tap.

16          3. All monitoring devices required in paragraph C.2. of this section are  
17 to be recalibrated annually and at other times as the Director may require, in  
18 accordance with the procedures in Appendix 9.

19          C. The test methods and procedures required under this section are as  
20 follows:

21          a. The reference methods set forth in the Arizona Testing Manual shall be  
22 used to determine compliance with the standards prescribed in subsections A. and  
23 B. of this section as follows:

24           1. Method 5 for concentration of particulate matter and associated moisture  
25 content.

26           2. Method 1 for sample and velocity traverses.

1           3. Method 2 for volumetric flow rate; and

2           4. Method 3 for gas analysis.

3           b. For Method 5, the sampling for each run shall continue for an integral  
4 number of cycles with total duration of at least 60 minutes. The sampling rate  
5 shall be at least 0.9 dscm/hr (0.53 dscf/min) except that shorter sampling times,  
6 when necessitated by process variables or other factors, may be approved by the  
7 Director. A cycle shall start at the beginning of either the scrap preheat or  
8 the oxygen blow and shall terminate immediately prior to tapping.

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10  
11 R9-3-514. Standards of performance for existing sewage treatment plants

12           A. The provisions of this section are applicable to all municipal sewage  
13 treatment plant sludge incinerators of any size which were existing or for  
14 which major alteration or construction commenced on or before the effective  
15 date of this section.

16           1. Notwithstanding the provisions of section R9-3-501., no person shall  
17 cause, suffer, allow or permit to be emitted into the atmosphere, from any  
18 sewage sludge incinerator subject to the provisions of this section, smoke,  
19 fumes, gases, particulate matter or other gas-borne material which exceeds 20  
20 percent for more than 30 seconds in any 60-minute period.

21           2. No person shall cause, suffer, allow or permit to be emitted into the  
22 atmosphere from any emission point from any sewage sludge incinerator subject  
23 to the provisions of this section or to pass a convenient measuring point near  
24 such emission point, particulate matter in concentrations in excess of 0.1 grain  
25 per cubic foot, based on dry flue gas at standard conditions, corrected to 12  
percent carbon dioxide.

1 B. Monitoring of operations required by this section is as follows:

2 1. The owner or operator of any sludge incinerator subject to the  
3 provisions of this section shall:

4 a. Install, calibrate, maintain and operate a flow measuring device which  
5 can be used to determine either the mass or volume of sludge charged to the  
6 incinerator. The flow measuring device shall have an accuracy of  $\pm 5$  percent  
7 over its operating range.

8 b. Provide access to the sludge charged so that a well-mixed representative  
9 grab sample of the sludge can be obtained.

10 c. Install, calibrate, maintain and operate a weighing device for  
11 determining the mass of any municipal solid waste charged to the incinerator  
12 when sewage sludge and municipal solid wastes are incinerated together. The  
13 weighing device shall have an accuracy of  $\pm 5$  percent over its operating range.

14 C. The test methods and procedures required by this section are as follows:

15 1. The reference method set forth in the Arizona Testing Manual shall be  
16 used to determine compliance with the standards prescribed in subsections A. and  
17 B. of this section as follows:

18 a. Method 5 for concentration of particulate matter and associated moisture  
19 content;

20 b. Method 1 for sample and velocity traverses;

21 c. Method 2 for volumetric flow rate; and

22 d. Method 3 for gas analysis.

23 2. For Method 5, the sampling time for each run shall be at least 60  
24 minutes and the sampling rate shall be at least 0.015 dscm/min (0.53 dscf/min),  
25 except that shorter sampling times, when necessitated by process variables or  
26 other factors, may be approved by the Director.

1 R9-3-515. Standards of performance for existing primary copper smelters

2 A. The provisions of this section are applicable to any primary copper  
3 smelter within the State of Arizona which was existing or for which major  
4 alteration or construction was commenced on or before the effective date of  
5 this section.

6 1. Application of subsection A. of R9-3-502. shall be stayed with regard  
7 to existing copper smelters for a period ending July 1, 1979.

8 2. Each copper smelter in Arizona now operating pursuant to an operating  
9 permit shall operate all of its particulate control equipment at maximum feasible  
10 efficiency during the stay period referred to in paragraph A.1.

11 3. Each copper smelter in Arizona operating pursuant to a conditional  
12 operating permit on December 2, 1975 shall complete all construction and testing  
13 of particulate pollution control equipment as expeditiously as practicable and  
14 shall promptly commence and continue operation of said equipment at maximum  
15 feasible efficiency during the stay period referred to in paragraph A.1. of  
16 this section.

17 4. No owner or operator of any existing copper smelter shall discharge or  
18 cause the discharge of sulfur compounds into the ambient air in excess of the  
19 applicable emission limits set forth in paragraphs 5. and 7. below, except as  
20 permitted by a temporary conditional permit, and no owner or operator of any  
21 existing copper smelter shall operate in a manner such as to cause a violation  
22 of the ambient air quality standards in section R9-3-202.

23 5. Compliance with the sulfur emission limit listed for each smelter in  
24 this paragraph can only be maintained by the continuous operation of that  
25 smelter's sulfur removal equipment at its maximum feasible efficiency.

26 a. For the copper smelter of Magma Copper Company, San Manuel Division,

1 the sulfur emission limit shall be an average of 148 tons per day in any  
2 calendar month.

3 b. For the copper smelter of ASARCO, Inc., Hayden, the sulfur emission  
4 limit shall be an average of 82 tons per day in any calendar month.

5 c. For the copper smelter of Phelps Dodge Corporation, Douglas Reduction  
6 Works, the sulfur emission limit shall be an average of 120 tons per day in any  
7 calendar month.

8 d. For the copper smelter of Phelps Dodge Corporation, Morenci Branch, the  
9 sulfur emission limit shall be an average of 145 tons per day in any calendar  
10 month.

11 e. For the copper smelter of Inspiration Consolidated Copper Company, the  
12 sulfur emission limit shall be an average of 85 tons per day in any calendar  
13 month.

14 f. For the copper smelter of Phelps Dodge Corporation, New Cornelia Branch,  
15 the sulfur emission limit shall be an average of 32 tons per day in any calendar  
16 month.

17 g. For the copper smelter of Kennecott Copper Corporation, Ray Mines  
18 Division, the sulfur emission limit shall be an average of 68 tons per day in any  
19 calendar month.

20 6. The ability of a particular smelter's sulfur dioxide removal equipment  
21 to maintain ambient air quality standards shall be demonstrated by a one-year air  
22 quality test program which, in the case of all smelters, other than Kennecott  
23 Copper Corporation, Ray Mines Division, shall commence on the date that the Director  
24 determines that all such equipment necessary to meet ambient air quality and  
25 emissions limits established by paragraph 4. has been installed and is in operation.  
26 The one-year demonstration shall be subject to the following conditions:

1           a. The demonstration for Kennecott Copper Corporation, Ray Mines Division,  
2 shall be conducted during the same one-year period as the demonstration is  
3 conducted for the Hayden Smelter of ASARCO, Inc.

4           b. The demonstration shall utilize the sulfur dioxide monitoring network  
5 required by Appendix 7 or, in the case of the Inspiration Consolidated Copper  
6 Company, shall utilize the monitors in operation on the effective date of this  
7 regulation supplemented by whatever monitors the Department may install to  
8 determine the capability of the smelter to meet the ambient air quality standards.  
9 The location of monitors described in this paragraph and the length of time that  
10 these monitors remain at a location shall be determined by the Director.

11           c. If, at the conclusion of the one-year demonstration, the Director  
12 determines that sulfur removal equipment alone is not adequate to maintain  
13 ambient air quality standards, then the Director shall adopt rules and regulations  
14 specifying those additional measures necessary to achieve ambient air quality  
15 standards. Such measures may include dispersion technology and continued use of  
16 a supplementary control system.

17           7. The Director has determined that for all existing smelters listed in  
18 paragraph 5 above, except Kennecott Copper Corporation, Ray Mines Division, and  
19 the Inspiration Consolidated Copper Company, compliance with the emission limits  
20 in paragraph 5 above would be either economically unreasonable or technologically  
21 unsound. Furthermore, the Director has determined that each existing smelter  
22 has installed all sulfur removal equipment that is economically reasonable and  
23 technologically sound for that smelter. Until the Director is able to make a  
24 finding, in accordance with paragraph 8 below, that the installation of sulfur  
25 removal technology necessary to comply with the emission limits in paragraph 5  
26 is both economically reasonable and technologically sound for a smelter listed

1 in this paragraph, and until the date established for installation of such  
2 technology, the following existing copper smelters shall comply with the  
3 interim emission limits established in subparagraph a. and the operating  
4 conditions established in subparagraph b. below.

5 a. Existing copper smelters other than Kennecott Copper Corporation, Ray  
6 Mines Division, and the Inspiration Consolidated Copper Company, shall comply  
7 with the following interim emission limits:

8 i. For the copper smelter of Magma Copper Company, San Manuel Division,  
9 the sulfur emission limit shall be an average of 448 tons per day in any  
10 calendar month.

11 ii. For the copper smelter of ASARCO, Inc., Hayden, the sulfur emission  
12 limit shall be an average of 301 tons per day in any calendar month.

13 iii. For the copper smelter of Phelps Dodge Corporation, Douglas  
14 Reduction Works, the sulfur emission limit shall be an average of 561 tons  
15 per day in any calendar month.

16 iv. For the copper smelter of Phelps Dodge Corporation, Morenci Branch,  
17 the sulfur emission limit shall be an average of 407 tons per day in any  
18 calendar month.

19 v. For the copper smelter of Phelps Dodge Corporation, New Cornelia  
20 Branch, the sulfur emission limit shall be an average of 89 tons per day in  
21 any calendar month.

22 b. Existing copper smelters listed in subparagraph a. above shall comply  
23 with the following conditions of operation:

24 i. All presently installed sulfur removal equipment shall be operated at  
25 its maximum feasible efficiency.

26 ii. A supplementary control system shall be operated which meets the

1 requirements of Appendix 7 to attain and maintain the ambient air quality  
2 standards for sulfur dioxide of R9-3-202. in the designated liability area for  
3 the smelters as defined in Appendix 7.

4       iii. The owner or operator of any smelter utilizing a supplementary  
5 control system to meet ambient air quality standards for sulfur dioxide shall  
6 undertake, finance or participate in financing research and development toward  
7 the implementation of new or improved sulfur removal and sulfur emissions  
8 monitoring technology applicable to that smelter. Prior to January 15 each  
9 year, the owner or operator of such smelter shall deliver to the Bureau a  
10 report summarizing research progress during the preceding year. The report  
11 shall include a summary of research activities undertaken, or financed or  
12 financially participated in by the owner or operator during the preceding year,  
13 the total cost of such research, the owner or operator's evaluation of new,  
14 improved or innovative technology reported in the statement, and the owner  
15 or operator's plan for research activities during the year for which the  
16 renewal of the permit is sought.

17       8. The Bureau shall, prior to April 1 each year, deliver to the Director  
18 a report summarizing all reports received as provided by subdivision 7.b.iii.  
19 together with any other information of which the Bureau may have knowledge  
20 concerning the development and improvement of sulfur removal and sulfur  
21 emissions monitoring technology. The report shall include the Bureau's  
22 evaluation of the practicability and capital costs of applying such new,  
23 improved or innovative technology. When the Director concludes, on the basis  
24 of any such annual report of the Bureau or other relevant data, that the  
25 application of a new improved or innovative sulfur removal technology may be  
26 economically reasonable and technologically sound for a particular smelter and

1 that the application of the technology will allow the sulfur emissions  
2 established for that smelter as an interim emission limit under paragraph 7  
3 to be significantly reduced, the Director shall notice for public hearing a  
4 proposal to alter the interim emission limit placed on the smelter in  
5 paragraph 7, based upon that smelter's application of the new, improved or  
6 innovative technology.

7 a. If, on the basis of the record of the public hearing, the Director  
8 finds that the new, improved or innovative sulfur removal technology is  
9 economically reasonable and technologically sound, the Director shall amend  
10 this regulation and the smelter's interim emission limit to reflect that  
11 finding. The Director shall modify the operating permit of the smelter to  
12 require the application of the approved technology.

13 b. In determining whether new, improved or innovative technology is  
14 economically reasonable and technologically sound for a specific smelter, the  
15 Director shall consider at least the following:

- 16 i. The effect of the application of such technology on the public health.
- 17 ii. Capital costs of installing such technology.
- 18 iii. The effect on smelter operating costs of operating such technology.
- 19 iv. Water and energy consumption of such technology.
- 20 v. The improvement in sulfur removal efficiencies expected to result  
21 from the operation of such technology.
- 22 vi. The effect a requirement to install such technology would have on  
23 the continued economic viability of the smelter.
- 24 vii. The effect a requirement to install such technology would have on  
25 the continued economic viability of other enterprises, facilities or the  
community dependent upon the smelter.

1       viii. The effect a requirement to install such technology would have on  
2 the safety of smelter employees.

3       ix. The availability of the technology.

4       x. The impact upon segments of the environment other than air.

5       9. Determination of compliance with the applicable emission limits in  
6 paragraphs 5. and 7. shall be subject to the following conditions:

7       a. The emission limit shall apply to all process sulfur emitted into the  
8 ambient air from smelter processing units and sulfur control and removal  
9 equipment. The total monthly amount of sulfur emissions is equal to the weight  
10 of the total sulfur introduced into the smelting process in any calendar month  
11 minus the weight of all sulfur removed from the smelter process streams in that  
12 month in any physical form. Removed sulfur shall include but not be limited to  
13 sulfur contained in slag, blister copper, sulfuric acid, liquified sulfur  
14 dioxide, elemental sulfur, flue dust, precipitator dust, acid plant sludge,  
15 scrubber effluent and absorption plant purge. All unremoved sulfur, including  
16 fugitive sulfur emissions, shall be considered as emissions to the ambient air.

17       b. Material balances for sulfur and copper described in subparagraph a.  
18 above shall be obtained in accordance with procedures listed in Appendix 8.

19       c. Compliance with the average daily emission limits established by this  
20 subsection is to be determined by dividing the total monthly emissions calculated  
21 under subparagraph b. above by the number of operating days in the particular  
22 month. For purposes of this calculation the emissions and days or fractions of  
23 days during which a smelter is operating under a temporary conditional permit  
24 may be excluded.

25       d. Each owner or operator of a copper smelter shall report to the Director  
26 not later than the fifteenth day of each month, the smelter material balance for

1 sulfur and copper and ambient sulfur dioxide data for the preceding calendar  
2 month required by the smelter's operating permit. The data shall be reported in  
3 such form and detail as will enable the Director to determine total indicated  
4 emissions and ambient air quality for the month.

5 e. Each smelter shall install, calibrate, operate and maintain a measurement  
6 system for continuously monitoring and recording sulfur dioxide emissions from  
7 sulfur removal equipment.

8 f. At each point in the smelter facility where a means exists to bypass  
9 the sulfur removal equipment, such bypass shall be instrumented and monitored to  
10 detect and record all periods that the bypass is in operation. Each owner or  
11 operator of a copper smelter shall report to the Director, not later than the  
12 fifteenth day of each month, the information required to be recorded by this  
13 subparagraph. Such report shall include an explanation for the necessity of  
14 the use of the bypass.

15 10. Where two or more smelters are so situated that the sulfur emissions  
16 of each may contribute significantly to violations of the standards set forth in  
17 R9-3-202. and if such standards are to be met by such smelters partially by  
18 means of supplementary control, the operators of such smelters are authorized  
19 and directed to consult with each other and to devise a plan for a coordinated  
20 supplementary control system that will meet the applicable standards and will  
21 allocate fairly among the participating smelters the extent and timing of the  
22 necessary intermittent sulfur emission curtailment. Such a plan shall be in  
23 writing and shall be submitted for approval to the Director, in the case of an  
24 application for operating permit, or the Hearing Board, in the case of an  
25 application for a conditional operating permit. The Director or the Hearing  
26 Board may reject a proposed plan in whole or in part and may condition its

1 approval upon the acceptance by the parties of specific modifications or  
2 amendments. No plan for a coordinated supplementary control system shall be  
3 carried out until it has been approved by the Director or the Hearing Board.  
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1 R9-3-516. Standards of performance for existing coal preparation plants

2 A. The provisions of this section are applicable to any of the following  
3 affected facilities in any existing coal preparation plant: Thermal dryers,  
4 pneumatic coal-cleaning equipment (air tables), coal processing and conveying  
5 equipment (including breakers and crushers), coal storage systems, and coal  
6 transfer and loading systems. This section is applicable to any coal prepara-  
7 tion plant for which construction or major alteration commenced on or before  
8 the effective date of this section.

9 1. No person shall cause, suffer, allow or permit the discharge of  
10 particulate matter into the atmosphere from any emission point in any one hour  
11 from any existing coal preparation plant located outside of the Phoenix-Tucson  
12 Air Quality Control Region, in total quantities in excess of the amounts cal-  
13 culated by the equations set forth below:

14 a. For process sources having a process weight rate of 60,000 pounds per  
15 hour (30 tons per hour) or less, the maximum allowable emissions shall be  
16 determined by the following equation:

$$17 \quad E = 4.10P^{0.67}$$

18 where:

19 E = the maximum allowable particulate emissions rate in pounds-mass per  
20 hour.

21 P = the process weight rate in tons-mass per hour.

22 b. For process sources having a process weight rate greater than 60,000  
23 pounds per hour (30 tons per hour), the maximum allowable emissions shall be  
24 determined by the following equation:

$$25 \quad E = 55.0P^{0.11} - 40$$

26 where "E" and "P" are defined as indicated in subparagraph A.1.a. of this section.

1           2. No person shall cause, suffer, allow or permit the discharge of parti-  
2 culate matter into the atmosphere from any emission point in any one hour from  
3 any existing coal preparation plant located in the Phoenix-Tucson Air Quality  
4 Control Region, in total quantities in excess of the amount calculated by the  
5 equations set forth below.

6           a. For process sources having a process weight rate of 60,000 pounds per  
7 hour (30 tons per hour) or less, the maximum allowable emissions shall be deter-  
8 mined by the following equation:

$$9 \qquad \qquad \qquad E = 3.59P^{0.62}$$

10 where:

11           E = maximum allowable particulate emissions rate in pounds-mass per hour.

12           P = the process weight rate in tons-mass per hour.

13           b. For process sources having a process weight rate greater than 60,000  
14 pounds per hour (30 tons per hour), the maximum allowable emissions shall be  
15 determined by the following equation:

$$16 \qquad \qquad \qquad E = 17.31P^{0.16}$$

17 where "E" and "P" are defined as indicated in subparagraph A.2.a. of this  
18 section.

19           3. For reference purposes only, the equations in paragraphs A.1. and A.2.  
20 of this section are plotted in Figure 2, Appendix 11. The emission values  
21 obtained from the graph are approximately correct for the process weight rates  
22 shown. However, the actual values shall be calculated from the applicable  
23 equations and rounded off to two decimal places.

24           4. The opacity of any emission subject to the provisions of this section  
25 shall not exceed 40 percent.

26           5. Fugitive emissions from coal preparation plants shall be controlled

1 in accordance with R9-3-404. through R9-3-407.

2 B. The test methods and procedures required by this section are as follows:

3 1. The reference methods in the Arizona Testing Manual are used to  
4 determine compliance with standards prescribed in subsection A. of this section  
5 as follows:

6 a. Method 5 for the concentration of particulate matter and associated  
7 moisture content.

8 b. Method 1 for sample and velocity traverses,

9 c. Method 2 for velocity and volumetric flow rate, and

10 d. Method 3 for gas analysis.

11 2. For Method 5, the sampling time for each run is at least 60 minutes and  
12 the minimum sample volume is 0.85 dscm (30 dscf) except that short sampling times  
13 or smaller volumes, when necessitated by process variables or other factors may  
14 be approved by the Director. Sampling is not to be started until 30 minutes  
15 after start-up and is to be terminated before shutdown procedures commence. The  
16 owner or operator of the affected facility shall eliminate cyclonic flow during  
17 performance tests in a manner acceptable to the Director.

18 3. The owner or operator shall construct the facility so that particulate  
19 emissions from thermal dryers or pneumatic coal cleaning equipment can be  
20 accurately determined by applicable test methods and procedures under paragraph  
21 B.1. of this section.

22  
23  
24 R9-3-517. Standards of performance for steel plants: existing electric arc  
25 furnaces (EAF)

26 A. The provisions of this section are applicable to the following affected

1 facilities in steel plants: Electric arc furnaces and dust-handling equipment,  
2 for which construction or major alteration commenced on or before the effective  
3 date of this section.

4 1. No person shall cause, suffer, allow or permit the discharge of parti-  
5 culate matter into the atmosphere from any emission point in any one hour from  
6 any steel plant in total quantities in excess of the amount calculated by the  
7 equations set forth below:

8 a. For process sources having a process weight rate of 60,000 pounds per  
9 hour (30 tons per hour) or less, the maximum allowable emissions shall be  
10 determined by the following equation:

$$11 \quad E = 3.59P^{0.62}$$

12 where:

13 E = the maximum allowable particulate emissions rate in pounds-mass per  
14 hour.

15 P = the process weight rate in tons-mass per hour.

16 b. For process sources having a process weight rate greater than 60,000  
17 pounds per hour (30 tons per hour), the maximum allowable emissions shall be  
18 determined by the following equation:

$$19 \quad E = 17.31P^{0.16}$$

20 where "E" and "P" are defined as indicated in subparagraph A.1.a above.

21 2. For reference purposes only, the equations given above are plotted in  
22 Appendix 11, Figure 2. The emission values obtained from the graph are approxi-  
23 mately correct for the process weight rates shown. However, the actual values  
24 shall be calculated from the applicable equations and rounded off to two decimal  
5 places.

26 3. An opacity standard of forty percent shall not be exceeded by existing

1 steel plant electric arc furnaces and their appurtenances for more than an  
2 aggregate of three minutes in any forty-five minute period.

3 B. Emission monitoring required by this section is as follows:

4 A continuous monitoring system for the measurement of the opacity of  
5 emissions discharged into the atmosphere from the control device(s) shall  
6 be installed, calibrated, maintained, and operated by the owner or operator  
7 subject to the provisions of this section.

8 C. The test methods and procedures required under this section are as  
9 follows:

10 1. Reference methods in the Arizona Testing Manual shall be used to deter-  
11 mine compliance with the standards prescribed under subsection A. of this  
12 section as follows:

13 a. Method 5 for concentration of particulate matter and associated mois-  
14 ture content.

15 b. Method 1 for sample and velocity and volumetric flow rate; and

16 c. Method 2 for velocity and volumetric flow rate; and

17 d. Method 3 for gas analysis.

18 2. For Method 5, the sampling time for each run shall be at least four  
19 hours. When a single EAF is sampled, the sampling time for each run shall  
20 also include an integral number of heats. Shorter sampling times, when necessi-  
21 tated by process variables or other factors, may be approved by the Director.  
22 The minimum sample volume shall be 4.5 dscm (160 dscf).

23  
24  
25 R9-3-518. Standards of performance for existing kraft pulp mills

26 A. The provisions of this section are applicable to the following affected

1 facilities in kraft pulp mills: digester system, brown stock washer system,  
2 multiple-effect evaporator system, black liquor oxidation system, recovery  
3 furnace, smelt dissolving tank, lime kiln, and condensate stripper system. In  
4 pulp mills in which kraft pulping is combined with neutral sulfite semichemical  
5 pulping, the provisions of this section are applicable when any portion of the  
6 material charged to an affected facility is produced by the kraft pulping opera-  
7 tion. The provisions of this section are applicable only to kraft pulp mills  
8 for which construction or major alteration commenced on or before the effective  
9 date of this section.

10 1. The standards for particulate matter under this section are:

11 a. No person shall cause, suffer, allow or permit the discharge of parti-  
12 culate matter into the atmosphere from any emission point in any one hour from  
13 any kraft pulp mill process source in total quantities in excess of the amounts  
14 calculated by the equations set forth below:

15 i. For process sources having a process weight rate of 60,000 pounds per  
16 hour (30 tons per hour) or less, the maximum allowable emissions shall be deter-  
17 mined by the following equation:

$$E = 4.10P^{0.67}$$

18 where:

19 E = the maximum allowable particulate emissions rate in pounds-mass per  
20 hour.  
21

22 P = the process weight rate in tons-mass per hour.

23 For process sources having a process weight rate greater than 60,000  
24 pounds per hour (30 tons per hour), the maximum allowable emissions shall be  
25 determined by the following equation:

$$E = 55.0P^{0.11} - 40$$

1 where "E" and "P" are defined in subdivision A.1.a.i. of this section.

2 b. For reference purposes only, the equations set forth above are plotted  
3 in Appendix 11, Figure 2. The emission values obtained from the graph are  
4 approximately correct for the process weight rates shown. However, the actual  
5 values shall be calculated from the applicable equations and rounded off to  
6 two decimal places.

7 c. No person shall cause, suffer, allow or permit to be emitted to the  
8 atmosphere from any affected facility under this section, smoke or other emis-  
9 sion which exceeds 40 percent opacity.

10 B. Monitoring of emissions and operations required by this section is as  
11 follows:

12 1. Any owner or operator subject to the provisions of this section shall  
13 install, calibrate, maintain, and operate the following continuous monitoring  
14 systems:

15 a. A continuous monitoring system to monitor and record the opacity of  
16 the gases discharged into the atmosphere from any recovery furnace. The span  
17 of this system shall be set at 70 percent opacity.

18 b. For any lime kiln or smelter dissolving tank using a scrubber emission  
19 control device:

20 i. A monitoring device for the continuous measurement of the pressure loss  
21 of the gas stream through the control equipment. The monitoring device is to be  
22 certified to the manufacturer to be accurate within a gage pressure of  $\pm 500$   
23 pascals (ca.  $\pm 2$  inches of water gage pressure).

24 ii. A monitoring device for the continuous measurement of the scrubbing  
25 liquid supply pressure to the control equipment. The monitoring device is to  
26 be certified by the manufacturer to be accurate within  $\pm 15$  percent of design

1 scrubbing liquid supply pressure. The pressure sensor or tap is to be located  
2 close to the scrubber liquid discharge point. The Director may be consulted for  
3 approval of alternative locations.

4 C. The test methods and procedures required by this section are as  
5 follows:

6 1. Reference methods in the Arizona Testing Manual except as provided  
7 under Section R9-3-312., shall be used to determine compliance with subsection  
8 A. and B. of this section as follows:

9 a. Method 5 for the concentration of particulate matter and the associated  
10 moisture content.

11 b. Method 1 for sample and velocity traverses.

12 c. Method 3 for gas analysis, and

13 d. Method 9 for visible emissions.

14 2. For Method 5, the sampling time for each run shall be at least 60  
15 minutes and the sampling rate shall be at least 0.85 dscm/hr (0.53 dscf/min)  
16 except that shorter sampling times, when necessitated by process variables or  
17 other factors, may be approved by the Director. Water shall be used as the  
18 cleanup solvent instead of acetone in the sample recovery procedure outlined  
19 in Method 5. For determination of compliance with this section, particulate  
20 measurements shall at least be made on the recovery furnace(s), smelt dissolving  
21 tank(s), and lime kiln(s). All concentrations of particulate matter from the  
22 lime kiln and recovery furnace shall be corrected to 10 volume percent oxygen  
23 and 8 volume percent oxygen, respectively, when the oxygen concentrations  
24 exceed these values.

1 R9-3-519. Standards of performance for existing stationary rotating machinery

2 A. The provisions of this section are applicable to the following affected  
3 facilities: all stationary gas turbines, oil-fired turbines, or internal com-  
4 bustion engines for which construction or a major alteration was commenced on  
5 or before the effective date of this section.

6 1. For purposes of this section, the heat input shall be the aggregate heat  
7 content of all fuels whose products of combustion pass through a stack or other  
8 outlet. The heat input value used shall be the equipment manufacturer's or  
9 designer's guaranteed maximum input, whichever is greater. The total heat input  
10 of all operating fuel-burning units on a plant or premises shall be used for  
11 determining the maximum allowable amount of particulate matter which may be  
12 emitted.

13 2. The standards for particulate matter under this section are:

14 a. No person shall cause, suffer, allow or permit the emission of parti-  
15 culate matter, caused by combustion of fuel, from any stationary rotating machinery  
16 in excess of the amounts calculated by the equations presented below.

17 i. For equipment having a heat input rate of 4200 million Btu per hour or  
18 less, the maximum allowable emissions shall be determined by the following  
19 equation:

20 
$$E = 1.02Q^{0.769}$$

21 where:

22 E = the maximum allowable particulate emissions rate in pounds-mass per  
23 hour.

24 Q = the heat input in million Btu per hour.

25 ii. For equipment having a heat input rate greater than 4200 million Btu/hr.,  
26 the maximum allowable emissions shall be determined by the following equation:

1 
$$E = 17.0Q^{0.432}$$

2 where "E" and "Q" have the same meaning as in subdivision A.2.a.i. above.

3 b. For reference purposes only, the two equations in subparagraph A.2.a.  
4 of this section are plotted in Appendix 11, Figure 1. The emission values  
5 obtained from the graph are approximately correct for the heat input rates  
6 shown. However, the actual values shall be calculated from the applicable  
7 equations and rounded off to two decimal places.

8 c. Notwithstanding the provisions of R9-3-501., no person shall cause,  
9 suffer, allow or permit to be emitted into the atmosphere from any stationary  
10 rotating machinery, smoke for any period greater than ten consecutive seconds  
11 which exceeds 40 percent opacity. Visible emissions when starting cold equipment  
12 shall be exempt from this requirement for the first ten minutes.

13 3. The standard for sulfur dioxide under this section is:

14 a. This section applies to an installation operated for the purpose of  
15 producing electric or mechanical power with a resulting discharge of sulfur  
16 dioxide in the installation's effluent gases.

17 b. Stationary rotating machinery installations which are existing sources  
18 shall burn fuel which limits the emission of sulfur dioxide to 1.0 pound per  
19 million Btu heat input when low sulfur oil is fired.

20 c. Stationary rotating machinery installations which are existing sources  
21 shall not emit more than 2.2 pounds of sulfur dioxide per million Btu heat  
22 input when high sulfur oil is fired.

23 d. Any permit issued for the operation of an existing source, or any  
24 renewal or modification of such a permit, shall include a condition prohibiting  
25 the use of high sulfur oil by the permittee, unless the applicant demonstrates  
26 to the satisfaction of the Director that sufficient quantities of low sulfur

oil are not available for use by the source, and that it has adequate facilities and contingency plans to insure that the sulfur dioxide ambient air quality standards set forth in R9-3-202. will not be violated. The terms of the permit may authorize the use of high sulfur oil under such conditions as are justified. In cases where the permittee is authorized to use high sulfur oil it shall submit to the Department monthly reports detailing its efforts to obtain low sulfur oil. When the conditions justifying the use of high sulfur oil no longer exist, the permit shall be modified accordingly.

e. For purposes of this regulation, low sulfur oil means fuel oil containing less than 0.90 percent by weight of sulfur and high sulfur oil means fuel oil containing 0.90 percent or more by weight of sulfur.

B. Monitoring of operations required by this section is as follows:

1. The owner or operator of any stationary rotating machinery subject to the provisions of this section shall record daily the sulfur content and lower heating value of the fuel being fired in the machine.

2. The owner or operator of any stationary rotating machinery subject to the provisions of this section shall report to the Director any daily period during which the sulfur content of the fuel being fired in the machine exceeds 0.8 percent.

C. The test methods and procedures required by this section are as follows:

1. The reference methods in the Arizona Testing Manual shall be used to determine compliance with the standards prescribed in paragraphs A.2. and A.3. of this section as follows:

- a. Reference Method 20 for the concentration of sulfur dioxide and oxygen.
- b. ASTM Method D-2880-71 for the sulfur content of liquid fuels and ASTM Method D-1072-70 of the sulfur content of gaseous fuels. These methods shall

1 also be used to comply with paragraph C.2. of this section.

2  
3  
4 R9-3-520. Standards of performance for existing lime manufacturing plants

5 A. The provisions of this section are applicable to the following affected  
6 facilities used in the manufacture of lime: rotary lime kilns, lime hydrators,  
7 and limestone crushing facilities for which construction or major alteration  
8 was commenced on or before the effective date of this section. This section is  
9 also applicable to limestone crushing equipment which exists apart from other  
10 lime manufacturing facilities.

11 1. No person shall cause, suffer, allow or permit the discharge of  
12 particulate matter into the atmosphere from any emission point in any one hour  
13 from any lime manufacturing or limestone crushing facility outside the Phoenix-  
14 Tucson Air Quality Control Region in total quantities in excess of the amounts  
15 calculated by the equations set forth below:

16 a. For process sources having a process weight rate of 60,000 pounds per  
17 hour (30 tons per hour) or less, the maximum allowable emissions shall be  
18 determined by the following equation:

19 
$$E = 4.10P^{0.67}$$

20 where:

21 E = the maximum allowable particulate emissions rate in pounds-mass per  
22 hour.

23 P = the process weight rate in tons-mass per hour.

24 b. For process sources having a process weight rate greater than 60,000  
25 pounds per hour (30 tons per hour), the maximum allowable emissions shall be  
26 determined by the following equation:

1 
$$E = 55.0P^{0.11} - 40$$

2 where:

3 E = the maximum allowable particulate emissions rate in pounds-mass per  
4 hour.

5 P = the process weight rate in tons-mass per hour.

6 2. No person shall cause, suffer, allow or permit the discharge of parti-  
7 culate matter into the atmosphere from any emission point in any one hour from  
8 any lime manufacturing or limestone crushing facility located within the Phoenix-  
9 Tucson Air Quality Control Region in total quantities in excess of the amount  
10 calculated by the equations set forth below:

11 a. For process sources having a process weight rate of 60,000 pounds per  
12 hour (30 tons per hour) or less, the maximum allowable emissions shall be  
13 determined by the following equation:

14 
$$E = 3.59P^{0.62}$$

15 where:

16 E = the maximum allowable particulate emissions rate in pounds-mass per  
17 hour.

18 P = the process weight rate in tons-mass per hour.

19 b. For process industries having a process weight rate greater than  
20 60,000 pounds per hour (30 tons per hour), the maximum allowable emissions  
21 shall be determined by the following equation:

22 
$$E = 17.31P^{0.16}$$

23 where "E" and "P" are defined as indicated in subparagraph A.2.a. of this  
24 section.

25 3. For reference purposes only, the equations in paragraphs A.1. and A.2.  
26 of this section are plotted in Appendix 11, Figure 2. The emission values

1 obtained from the graph are approximately correct for the process weight rates  
2 shown. However, the actual values shall be calculated from the applicable  
3 equations and rounded off to two decimal places.

4 4. Notwithstanding the provisions of R9-3-501., no person shall cause,  
5 suffer, allow or permit to be emitted into the atmosphere from any lime manu-  
6 facturing or limestone crushing facility smoke or dust which exceeds 40 percent  
7 opacity.

8 5. Fugitive emissions from lime manufacturing plants shall be controlled  
9 in accordance with R9-3-404. through R9-3-407.

10 B. Monitoring of emissions and operations required by this section is as  
11 follows:

12 1. The owner or operator subject to the provisions of this section shall  
13 install, calibrate, maintain, and operate a continuous monitoring system, except  
14 as provided in paragraph B.2. of this section, to monitor and record the opacity  
15 of the gases discharged into the atmosphere from any rotary lime kiln. The span  
16 of this system shall be set at 70 percent opacity.

17 2. The owner or operator of any rotary lime kiln using a wet scrubbing  
18 emission control device subject to the provisions of this section shall not be  
19 required to monitor the opacity of the gases discharged as required in paragraph  
20 B.1. of this section.

21 C. The test methods and procedures required by this section are as follows:

22 1. The reference methods in the Arizona Testing Manual shall be used to  
23 determine compliance with subsections A. and B. of this section as follows:

- 24 a. Method 5 for the measurement of particulate matter,  
25 b. Method 1 for sample and velocity traverses,  
26 c. Method 2 for velocity and volumetric flow rate,

- d. Method 3 for gas analysis,
- e. Method 4 for stack gas moisture, and
- f. Method 9 for visible emissions.

2. For Method 5, the sampling time for each run shall be at least 60 minutes and the sampling rate shall be at least 0.85 dscm/hr (0.53 dscf/min), except that shorter sampling times, when necessitated by process variables or other factors, may be approved by the Director.

3. Because of the high moisture content (40 to 85 percent by volume) of the exhaust gases from the hydrators, the Method 5 sample train may be modified to include a calibrated orifice immediately following the sample nozzle when testing lime hydrators. In this configuration, the sampling rate necessary for maintaining isokinetic conditions can be directly related to exhaust gas velocity without a correction for moisture content. Extra care should be exercised when cleaning the sample train with the orifice in this position following the test runs.

#### R9-3-521. Standards of performance for existing non-ferrous metals industry sources

A. The provisions of this section are applicable to the following affected facilities: mines, mills, concentrators, crushers, screens, material handling facilities, fine ore storage, dryers, roasters, and loaders which have commenced construction or major alteration prior to the effective date of this section.

1. No person shall cause, suffer, allow or permit the discharge of particulate matter into the atmosphere from any emission point in any one hour from any process source subject to the provisions of this section and outside of the

1 Phoenix - Tucson Air Quality Control Region, in total quantities in excess of the  
2 amounts calculated by the equations set forth below:

3 a. For process sources having a process weight rate of 60,000 pounds per  
4 hour (30 tons per hour) or less, the maximum allowable emissions shall be deter-  
5 mined by the following equation:

$$6 \quad E = 4.10P^{0.67}$$

7 where:

8 E = the maximum allowable particulate emissions rate in pounds-mass per hour.

9 P = the process weight rate in tons-mass per hour.

10 b. For process sources having a process weight greater than 60,000 pounds  
11 per hour (30 tons per hour), the maximum allowable emissions shall be determined  
12 by the following equation:

$$13 \quad E = 55.0P^{0.11} - 40$$

14 where "E" and "P" are defined as indicated in subparagraph A.1.a. of this section.

15 2. No person shall cause, suffer, allow or permit the discharge of parti-  
16 culate matter into the atmosphere from any emission point in any one hour from  
17 any mining property process source located in the Phoenix-Tucson Air Quality  
18 Control Region except smelters, in total quantities in excess of the amount cal-  
19 culated by the equations set forth below:

20 a. For process sources having a process weight rate of 60,000 pounds per  
21 hour (30 tons per hour) or less, the maximum allowable emissions shall be deter-  
22 mined by the following equation:

$$23 \quad E = 3.59P^{0.62}$$

24 where:

25 E = the maximum allowable particulate emissions rate in pounds-mass per hour.

26 P = the process weight rate in tons-mass per hour.

1           b. For process sources having a process weight rate greater than 60,000  
2 pounds per hour (30 tons per hour), the maximum allowable emissions  
3 shall be determined by the following equation:

$$4 \qquad \qquad \qquad E = 17.31P^{0.16}$$

5 where "E" and "P" are defined as indicated in subparagraph A.2.a. of this section.

6           3. For reference purposes only, the equations in paragraphs A.1. and A.2.  
7 of this section are plotted in Appendix 11, Figure 2. The emission values  
8 obtained from the graph are approximately correct for the process weight rates  
9 shown. However, the actual values shall be calculated from the applicable  
10 equations and rounded off to two decimal places.

11           4. Mining properties subject to the provisions of this section shall  
12 control fugitive dust in accordance with sections R9-3-404. through R9-3-408.

13           5. No person shall cause, suffer, allow or permit the discharge of any  
14 emissions from any mining property process or non-point source subject to the  
15 provisions of this section, dust or smoke that exceeds 40 percent opacity.

16           B. No person shall cause, suffer, allow or permit to be discharged into  
17 the atmosphere from any dryer or roaster the operating temperature of which  
18 exceeds 700<sup>0</sup> F., reduced sulfur, which includes sulfur equivalent from all  
19 sulfur emissions including but not limited to sulfur dioxide, sulfur trioxide  
20 and sulfuric acid, in excess of ten percent of the sulfur entering the process  
21 as feed.

22           C. Monitoring of operations required by this section are:

23           1. The owner or operator of any mining property subject to the provisions  
24 of this section shall record the daily process rates and hours of operation of  
25 all material handling facilities.

26           2. A continuous monitoring system for measuring sulfur dioxide emissions

1 shall be installed, calibrated, maintained and operated by the owner or operator  
2 where dryers or roasters are not expected to achieve compliance with the standard  
3 under subsection B. of this section.

4 D. The test methods and procedures required by this section are as follows:

5 1. The reference methods in the Arizona Testing Manual shall be used to  
6 determine compliance with the standard prescribed in subsections A. and B. of  
7 this section as follows:

8 a. Method 5 for the concentration of particulate matter and the associated  
9 moisture content;

10 b. Method 1 for sample and velocity traverses;

11 c. Method 2 for velocity and volumetric flow rate; and

12 d. Method 3 for gas analysis and calculation of excess air, using the  
13 integrated sample technique;

14 e. Method 6 for concentration of  $\text{SO}_2$ .

15 2. For Method 5, Method 1 shall be used to select the sampling site and  
16 the number of traverse sampling points. The sampling time for each run shall  
17 be at least 60 minutes and the minimum sampling volume shall be 0.85 dscm (30  
18 dscf) except that smaller sampling times or volumes, when necessitated by process  
19 variables or other factors, may be approved by the Director. The probe and  
20 filter holder heating systems in the sampling train shall be set to provide a  
21 gas temperature no greater than  $160^{\circ}\text{C}$ . ( $320^{\circ}\text{F}$ .)

22 3. For Method 6, the sampling site shall be the same as that selected for  
23 Method 5. The sampling point in the duct shall be at the centroid of the cross  
24 section or at a point no closer to the walls than 1 m (3.28 ft). For Method 6,  
25 the sample shall be extracted at a rate proportional to the gas velocity at the  
26 sampling point.

4. For Method 6, the minimum sampling time shall be 20 minutes and the minimum sampling volume 0.02 dscm (0.71 dscf) for each sample. The arithmetic mean of two samples shall constitute one run. Samples shall be taken at approximately 30-minute intervals.

R9-3-522. Standards of performance for existing gravel or crushed stone processing plants

A. The provisions of this section are applicable to the following affected facilities: Primary rock crushers, secondary rock crushers, tertiary rock crushers, screens, conveyors and conveyor transfer points, stackers, reclaimers, and all gravel or crushed stone processing plants and rock storage piles which commenced construction or a major alteration prior to the effective date of this section.

1. No person shall cause, suffer, allow or permit the discharge of particulate matter into the atmosphere except as fugitive emissions in any one hour from any gravel or crushed stone processing plant outside of the Phoenix-Tucson Air Quality Control Region, in total quantities in excess of the amounts calculated by the equations set forth below:

a. For process sources having a process weight rate of 60,000 pounds per hour (30 tons per hour) or less, the maximum allowable emissions shall be determined by the following equation:

$$E = 4.10P^{0.67}$$

where:

E = the maximum allowable particulate emissions rate in pounds-mass per hour.

1           P = the process weight rate in tons-mass per hour.

2           b. For process sources having a process weight rate greater than 60,000  
3 pounds per hour (30 tons per hour), the maximum allowable emissions shall be  
4 determined by the following equation:

$$5 \qquad E = 55.0P^{0.11} - 40$$

6 where "E" and "P" are defined as indicated in subparagraph A.1.a.

7           2. No person shall cause, suffer, allow or permit the discharge of parti-  
8 culate matter into the atmosphere except as fugitive emissions in any one hour from  
9 any gravel or crushed stone processing plant located in the Phoenix-Tucson Air  
10 Quality Control Region, in total quantities in excess of the amount calculated  
11 by the equations set forth below:

12           a. For process sources having a process weight rate of 60,000 pounds per  
13 hour (30 tons per hour) or less, the maximum allowable emissions shall be deter-  
14 mined by the following equation:

$$15 \qquad E = 3.59P^{0.62}$$

16 where:

17           E = the maximum allowable particulate emissions rate in pounds-mass per  
18 hour.

19           P = the process weight rate in tons-mass per hour.

20           b. For process sources having a process weight rate greater than 60,000  
21 pounds per hour (30 tons per hour), the maximum allowable emission shall be  
22 determined by the following equation:

$$23 \qquad E = 17.31P^{0.16}$$

24 where "E" and "P" are defined as indicated in subparagraph A.2.a. of this section.

25           3. For reference purposes only, the equations in paragraphs A.1. and A.2.  
26 of this section are plotted in Appendix 11, Figure 2. The emission values

1 obtained from the graph are approximately correct for the process weight rates  
2 shown. However, the actual values shall be calculated from the applicable  
3 equations and rounded off to two decimal places.

4 4. Notwithstanding the provisions of section R9-3-501., no person shall  
5 cause, suffer, allow or permit to be emitted into the atmosphere from any gravel  
6 or crushed stone processing plant, smoke or dust that exceeds 40 percent opacity.

7 5. Fugitive emissions from gravel or crushed stone processing plants shall  
8 be controlled in accordance with sections R9-3-404. through R9-3-407.

9 B. Monitoring of operations required by this section is as follows:

10 1. The owner or operator of any affected facility subject to the provisions  
11 of this section shall install, calibrate, maintain, and operate monitoring devices  
12 which can be used to determine daily the process weight of gravel or crushed stone  
13 produced. The weighing devices shall have an accuracy of  $\pm 5$  percent over their  
14 operating range.

15 2. The owner or operator of any affected facility shall maintain a record  
16 of daily production rates of gravel or crushed stone produced.

17 C. The test methods and procedures required by this section are as follows:

18 1. The reference methods in the Arizona Testing Manual shall be used to  
19 determine compliance with the standards prescribed in subsection A. of this  
20 section as follows:

- 21 a. Method 5 for concentration of particulate matter and moisture content,
- 22 b. Method 1 for sample and velocity traverses,
- 23 c. Method 2 for velocity and volumetric flow rate, and
- 24 d. Method 3 for gas analysis.

25 2. For Method 5, the sampling time for each run is at least 60 minutes  
26 and the minimum sample volume is 0.85 dscm (30 dscf) except that shorter sampling

1 times or smaller volumes, when necessitated by process variables or other factors,  
2 may be approved by the Director. Sampling is not to be started until 30 minutes  
3 after start-up and is to be terminated before shutdown procedures commence. The  
4 owner or operator of this affected facility shall eliminate cyclonic flow during  
5 performance tests in a manner acceptable to the Director.  
6  
7

8 R9-3-523. Standards of performance for existing concrete batch plants

9 A. The provisions of this section are applicable to all concrete batch  
10 plants under State of Arizona jurisdiction which have the capability of emitting  
11 more than 100 tons per year of air contaminants and which commenced construction  
12 or major alteration prior to the effective date of this section.

13 B. Fugitive dust emitted from affected concrete batch plants shall be  
14 controlled in accordance with sections R9-3-404. through R9-3-407. Visible  
15 emissions from affected concrete batch plants shall be controlled in accordance  
16 with section R9-3-501.  
17  
18

19 R9-3-524. Standards of performance for existing fossil-fuel fired industrial  
20 and commercial equipment

21 A. This section applies to industrial and commercial installations in  
22 which fuel is burned for the primary purpose of producing steam, hot water,  
23 hot air or other liquids, gases or solids and in the course of doing so the  
24 products of combustion do not come into direct contact with process materials.  
25 When any products or byproducts of a manufacturing process are burned for the  
26 same purpose or in conjunction with any fuel, the same maximum emission limitations

1 shall apply. This section shall be applicable to all fossil-fuel fired industrial  
2 and commercial equipment which commenced construction, or major alteration prior  
3 to the effective date of this section.

4 B. For purposes of this regulation, the heat input shall be the aggregate  
5 heat content of all fuels whose products of combustion pass through a stack or  
6 other outlet. The heat content of solid fuel shall be determined in accordance  
7 with section R9-3-310.B. The heat input value used shall be the equipment manu-  
8 facturer's or designer's guaranteed maximum input, whichever is greater. The  
9 total heat input of all fuel-burning units on a plant or premises shall be used  
10 for determining the maximum allowable amount of particulate matter which may be  
11 emitted.

12 C. The standards for particulate matter under this section are as follows:

13 1. No person shall cause, suffer, allow or permit the emission of parti-  
14 culate matter, caused by combustion of fuel, from any fuel-burning operation in  
15 excess of the amounts calculated by the equations presented below:

16 a. For equipment having a heat input rate of 4200 million Btu per hour or  
17 less, the maximum allowable emissions shall be determined by the following  
18 equation:

$$19 \quad E = 1.02Q^{0.769}$$

20 where:

21 E = the maximum allowable particulate emissions rate in pounds-mass per  
22 hour.

23 Q = the heat input in million Btu per hour.

24 b. For equipment having a heat input rate greater than 4200 million Btu/hr,  
25 the maximum allowable emissions shall be determined by the following equation:

$$26 \quad E = 17.0Q^{0.432}$$

1 where "E" and "Q" have the same meanings as in subparagraph C.1.a.

2 2. For reference purposes only, the two equations in paragraph C.1. of  
3 this section are plotted in Appendix 11, Figure 1. The emission values obtained  
4 from the graph are approximately correct for the heat input rates shown. However,  
5 the actual values shall be calculated from the applicable equations and rounded  
6 off to two decimal places.

7 D. The standards for sulfur dioxide under this section are as follows:

8 1. Fossil-fuel fired industrial and commercial equipment installations  
9 which are existing sources shall not emit more than 1.0 pounds of sulfur dioxide  
10 per million Btu heat input when low sulfur oil is fired.

11 2. Fossil-fuel fired industrial and commercial equipment installations  
12 which are existing sources shall not emit more than 2.2 pounds of sulfur dioxide  
13 per million Btu heat input when high sulfur oil is fired.

14 3. Any permit issued for the operation of an existing source, or any  
15 renewal or modification of such a permit, shall include a condition prohibiting  
16 the use of high sulfur oil by the permittee, unless the applicant demonstrates  
17 to the satisfaction of the Director that sufficient quantities of low sulfur oil  
18 are not available for use by the source, and that it has adequate facilities and  
19 contingency plans to insure that the sulfur dioxide ambient air quality standards  
20 set forth in section R9-3-202. will not be violated. The terms of the permit may  
21 authorize the use of high sulfur oil under such conditions as are justified. In  
22 cases where the permittee is authorized to use high sulfur oil it shall submit  
23 to the Department monthly reports detailing its efforts to obtain low sulfur oil.  
24 When the conditions justifying the use of high sulfur oil no longer exist, the  
25 permit shall be modified accordingly.

26 4. For purposes of this regulation low sulfur oil means fuel oil containing

1 less than 0.90 percent by weight of sulfur and high sulfur oil means fuel oil  
2 containing 0.90 percent or more by weight of sulfur.

3 5. Fossil-fuel fired industrial and commercial equipment installations  
4 which are existing sources shall not emit more than 1.0 pounds of sulfur dioxide  
5 per million Btu heat input when coal is fired.

6 F. Emission monitoring required by this section is as follows:

7 1. The owner or operator subject to the provisions of this section shall  
8 install, calibrate, maintain and operate a continuous monitoring system for  
9 measurement of the opacity of emissions discharged into the atmosphere from the  
10 control device(s).

11 2. For the purpose of reports required under excess emissions reporting  
12 required by section R9-3-314. the owner or operator shall report all six-minute  
13 periods in which the opacity of any plume or effluent exceeds 15 percent.

14 G. The test methods and procedures required by this section are as follows:

15 1. The reference methods in the Arizona Testing Manual shall be used to  
16 determine compliance with the standards as prescribed in subsections C., D. and  
17 E. of this section.

18 a. Method 1 for selection of sampling site and sample traverses,

19 b. Method 3 for gas analysis to be used when applying Reference Methods 5  
20 and 6.

21 c. Method 5 for concentration of particulate matter and the associated  
22 moisture content.

23 d. Method 6 for concentration of  $\text{SO}_2$ .

24 2. For Method 5, Method 1 shall be used to select the sampling site and  
25 the number of traverse sampling points. The sampling time for each run shall  
26 be at least 60 minutes and the minimum sampling volume shall be 0.85 dscm

(30 dscf) except that smaller sampling times or volumes, when necessitated by process variables or other factors, may be approved by the Director. The probe and filter holder heating systems in the sampling train shall be set to provide a gas temperature no greater than 160<sup>0</sup> C. (320<sup>0</sup> F.)

3. For Method 6, the sampling site shall be the same as that selected for Method 5. The sampling point in the duct shall be at the centroid of the cross section or at a point no closer to the walls than 1 m (3.28 ft). For Method 6, the sample shall be extracted at a rate proportional to the gas velocity at the sampling point.

4. For Method 6, the minimum sampling time shall be 20 minutes and the minimum sampling volume 0.02 dscm (0.71 dscf) for each sample. The arithmetic mean of two samples shall constitute one run. Samples shall be taken at approximately 30-minute intervals.

5. Gross calorific value shall be determined in accordance with ASTM methods D-2015-66(72) (solid fuels), D-240-64(73) (liquid fuels), or D-1826-64(70) (gaseous fuels) as applicable. The rate of fuels burned during each testing period shall be determined by suitable methods and shall be confirmed by a material balance over the fossil-fuel fired system.

#### R9-3-525. Standards of performance for existing dry cleaning plants

A. This section is applicable to all dry cleaning plants which commenced construction or a major alteration prior to the effective date of this section.

B. Dry cleaning plants utilizing chlorinated synthetic solvents: No person shall conduct any dry cleaning operation using chlorinated synthetic solvents without minimizing organic solvent emissions by good modern practices including

but not limited to the use of an adequately sized and properly maintained activated carbon absorber or other equally effective control device.

C. Dry cleaning plants utilizing petroleum solvents: No person shall operate any dry cleaning establishment using petroleum solvents other than Stoddard, 140 (safety solution) or other non-photochemical reactive solvents without reducing solvent emissions by at least 90 percent.

D. Where a stack, vent or other outlet is at such a level that fumes, gas mist, odor, smoke, vapor or any combination thereof constituting air pollution are discharged to adjoining property, the Director may require the installation of abatement equipment or the alteration of such stack, vent, or other outlet by the owner or operator thereof to a degree that will adequately dilute, reduce or eliminate the discharge of air pollution to adjoining property.

#### R9-3-526. Sandblasting operations

No person shall cause or permit sandblasting or other abrasive blasting without minimizing dust emissions to the atmosphere by good modern practices, such as wet blasting, the use of effective enclosures with necessary dust collecting equipment, or other acceptable means.

#### R9-3-527. Spray painting operations

A. No person shall conduct any spray paint operation without minimizing organic solvent emissions by good modern practices. Such operations other than architectural coating and spot painting shall be conducted in an enclosed area equipped with controls containing no less than 96 percent of the overspray.

1           B. No person shall employ, apply, evaporate or dry any architectural  
2 coating for industrial or commercial purposes, material containing photochemically  
3 reactive solvents or shall thin or dilute any architectural coating with a photo-  
4 chemically reactive solvent.

5           C. No person shall, during any one day, dispose of a total of more than  
6 one and one-half gallons of any photochemically reactive solvent in such manner  
7 as to permit the evaporation of the solvent into the atmosphere.

8  
9  
10 R9-3-528. Standards of performance for existing ammonium sulfide manufacturing  
11 plants

12           A. The provisions of this section are applicable to the following affected  
13 facilities in ammonium sulfide manufacturing plants: Sulfide unloading facilities,  
14 reactor-absorber, bubble cap scrubbers, and fume incinerator. This is applicable  
15 to all ammonium sulfide manufacturing plants under State of Arizona jurisdiction  
16 which commenced construction or major alteration prior to the effective date of  
17 this section.

18           B. The standards for particulate matter are as follows:

19           1. Notwithstanding the provisions of section R9-3-501., no person shall  
20 cause, suffer, allow or permit to be emitted into the atmosphere, from any type  
21 of incinerator or other outlet smoke, fumes, gases, particulate matter or other  
22 gas-borne material, the opacity of which exceeds 20 percent.

23           2. No person shall cause, suffer, allow or permit to be emitted into the  
24 atmosphere from any emission point from any incinerator, or to pass a convenient  
25 measuring point near such emission point, particulate matter of concentrations in  
26 excess of 0.1 grain per cubic foot, based on dry flue gas at standard conditions,

1 corrected to 12 percent carbon dioxide.

2 C. The standard for hydrogen sulfide is as follows:

3 1. No person shall allow hydrogen sulfide to be emitted from any location  
4 in such manner and amount that the concentration of such emissions into the  
5 ambient air at any occupied place beyond the premises on which the source is  
6 located exceeds 0.03 parts per million by volume for any averaging period of  
7 30 minutes or more.

8 D. Where a stack, vent or other outlet is at such a level that fumes,  
9 gas mist, odor, smoke, vapor or any combination thereof constituting air pollu-  
10 tion are discharged to adjoining property, the Director may require the instal-  
11 lation of abatement equipment or the alteration of such stack, vent, or other  
12 outlet by the owner or operator thereof to a degree that will adequately dilute,  
13 reduce or eliminate the discharge of air pollution to adjoining property.

14 E. Monitoring of operations required by this section is as follows:

15 1. The owner or operator of any ammonium sulfide tailgas incinerator  
16 subject to the provisions of this section shall:

17 a. Install, calibrate, maintain, and operate a flow measuring device  
18 which can be used to determine either the mass or volume of tailgas charged  
19 to the incinerator. The flow measuring device shall have an accuracy of  $\pm$   
20 5 percent over its operating range.

21 b. Provide access to the tailgas charged so that a well-mixed representa-  
22 tive grab sample can be obtained.

23 F. The test methods and procedures required by this section are as follows:

24 1. The reference methods in the Arizona Testing Manual shall be used to  
25 determine compliance with the standard prescribed in subsections B. and C. of  
26 this section as follows:

1           a. Method 5 for the concentration of particulate matter and the associated  
2 moisture content;

3           b. Method 1 for sample and velocity traverse;

4           c. Method 2 for velocity and volumetric flow rate;

5           d. Method 3 for gas analysis and calculation of excess air, using the  
6 integrated sample technique; and

7           e. Method 11 shall be used to determine the concentration of H<sub>2</sub>S and  
8 Method 6 shall be used to determine the concentration of SO<sub>2</sub>.

9           2. For Method 5, the sampling time for each run shall be at least 60  
10 minutes and the minimum sample volume shall be 0.85 dscm (30.0 dscf) except  
11 that shorter sampling times and smaller sample volumes, when necessitated by  
12 process variables or other factors, may be approved by the Director.

13           3. Particulate matter emissions, expressed in g/dscm, shall be corrected  
14 to 12 percent CO<sub>2</sub> by using the following formula:

$$C_{12} = \frac{12c}{\%CO_2}$$

17 where:

18           C<sub>12</sub> = the concentration of particulate matter corrected to 12 percent CO<sub>2</sub>,

19           c = the concentration of particulate matter as measured by Method 5, and

20           %CO<sub>2</sub> = the percentage of CO<sub>2</sub> as measured by Method 3, or when applicable,  
21 the adjusted outlet CO<sub>2</sub> percentage.

22           4. If Method 11 is used, the gases sampled shall be introduced into the  
23 sampling train at approximately atmospheric pressure. Where fuel gas lines are  
24 operating at pressures substantially above atmosphere, this may be accomplished  
25 with a flow control valve. If the line pressure is high enough to operate the  
26 sampling train without a vacuum pump, the pump may be eliminated from the sampling

1 train. The sample shall be drawn from a point near the centroid of the fuel gas  
2 line. The minimum sampling time shall be 10 minutes and the minimum sampling  
3 volume 0.01 dscm (0.35 dscf) for each sample. The arithmetic average of two  
4 samples of equal sampling time shall constitute one run. Samples shall be  
5 taken at approximately 1-hour intervals.

6 For most fuel gases, sample times exceeding 20 minutes may result in depletion  
7 of the collecting solution, although fuel gases containing low concentrations  
8 of hydrogen sulfide may necessitate sampling for longer periods of time.

9 5. If Method 5 is used, Method 1 shall be used for velocity traverses and  
10 Method 2 for determining velocity and volumetric flow rate. The sampling site  
11 for determining CO<sub>2</sub> concentration by Method 6 shall be the same as for determining  
12 volumetric flow rate by Method 2. The sampling point in the duct for  
13 determining SO<sub>2</sub> concentration by Method 6 shall be at the centroid of the cross  
14 section if the cross sectional area is less than 5 m<sup>2</sup> (54 ft<sup>2</sup>) or at a point no  
15 closer to the walls than 1 m (3.28 feet) if the cross sectional area is 5 m<sup>2</sup>  
16 or more and the centroid is more than one meter from the wall. The sample shall  
17 be extracted at a rate proportional to the gas velocity at the sampling point.  
18 The minimum sampling time shall be 10 minutes and the minimum sampling volume  
19 0.01 dscm (0.36 dscf) for each sample. The arithmetic average of two samples  
20 of equal sampling time shall constitute one run. Samples shall be taken at  
21 approximately one-hour intervals.

22  
23  
24 R9-3-529. Standards of performance for existing cotton gins

25 (Reserved)  
26

1           ARTICLE 6. EMISSIONS FROM MOBILE POINT SOURCES (NEW AND EXISTING)

2       R9-3-601. General

3           This article is applicable to mobile sources which either move while  
4 emitting air contaminants or are frequently moved during the course of their  
5 utilization, but are not classified as motor vehicles, agricultural vehicles,  
6 or agricultural equipment used in normal farm operations. Unless otherwise  
7 specified, no mobile source shall emit smoke or dust the opacity of which exceeds  
8 40 percent.

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11       R9-3-602. Off-road machinery

12           A. Off-road machinery shall include trucks (such as mining trucks), graders,  
13 scrapers, rollers, and other construction and mining machinery not normally  
14 driven on a completed public roadway.

15           B. Notwithstanding the provisions of R9-3-601, no person shall cause,  
16 suffer, allow or permit to be emitted into the atmosphere from any off-road  
17 machinery, smoke for any period greater than ten consecutive seconds, the  
18 opacity which exceeds 40 percent. Visible emissions when starting cold equip-  
19 ment shall be exempt from this requirement for the first ten minutes.

20           C. Off-road machinery shall conform to the regulations for fugitive dust  
21 emissions contained in sections R9-3-404 through R9-3-407.

22  
23  
24       R9-3-603. Heater-planer units

25           No person shall cause, suffer, allow or permit to be emitted into the atmos-  
26 phere, from any heater-planer operated for the purpose of reconstructing

1 asphalt pavements, smoke the opacity of which exceeds 20 percent. However  
2 three minutes' upset time in any one hour will not constitute a violation of  
3 this regulation.

4  
5  
6 R9-3-604. Roadway and site cleaning machinery

7 A. No person shall cause, suffer, allow or permit the cleaning of any  
8 site, roadway, or alley without taking reasonable precautions to prevent  
9 particulate matter from becoming airborne. Dust and other particulates shall  
10 be kept to a minimum by employing dust suppressants, wetting down, vacuum  
11 devices or by other reasonable means. Earth or other material shall be removed  
12 from paved streets onto which earth or other material has been transported by  
13 trucking or earth moving equipment, erosion by water or by other means.

14 B. Notwithstanding the provisions of R9-3-601, no person shall cause,  
15 suffer, allow or permit to be emitted into the atmosphere from any roadway and  
16 site cleaning machinery, smoke or dust for any period greater than ten consecu-  
17 tive seconds, the opacity of which exceeds 40 percent. Visible smoke emissions  
18 when starting cold equipment shall be exempt from this requirement for the first  
19 ten minutes.

20  
21  
22 R9-3-605. Asphalt or tar kettles

23 No person shall cause or permit the operation of an asphalt or tar kettle  
24 without minimizing air contaminant emissions by utilizing all reasonably avail-  
25 able control measures including the control of temperature recommended by the  
26 asphalt or tar manufacturer, the operation of the kettle with lid closed except

1 when charging, the pumping of asphalt from the kettle or the drawing of asphalt  
2 through cocks with no dipping, the dipping of tar in an approved manner, the  
3 maintaining of the kettle in clean, properly adjusted, and good operating  
4 condition, the firing of the kettle with liquid petroleum gas or other fuels  
5 acceptable to the Director.

6  
7  
8 ARTICLE 7. NON-FERROUS SMELTER ORDERS

9 Reserved

10  
11  
12 ARTICLE 8. NEW SOURCE PERFORMANCE STANDARDS

13 R9-3-801. General

14 A. Subpart A of Part 60, Title 40 of the Code of Federal Regulations  
15 along with all duly promulgated revisions as of the date of adoption of these  
16 Rules and Regulations is herewith adopted by reference except as follows:

17 1. "Administrator" shall in this article be taken to mean the Director of  
18 the Arizona Department of Health Services.

19 2. Delete sections 60.4, 60.5, and 60.6.  
20  
21

22 R9-3-802. Standards of performance for fossil-fuel fired steam generators

23 A. Subpart D of Part 60, Title 40 of the Code of Federal Regulations  
24 along with all duly promulgated revisions as of the date of adoption of these  
25 Rules and Regulations is herewith adopted by reference except as follows:

26 1. Delete subparagraph 60.43 (a)(2) and substitute:

1 60.43

2 (a)

3 "(2) 340 nanograms per joule heat input (0.8 lb. per million Btu) derived from  
4 solid fossil fuel or solid fossil fuel and wood residue."

5 2. Delete paragraph 60.43(b) in its entirety.  
6  
7

8 R9-3-803. Standards of performance for incinerators

9 Subpart E of Part 60, Title 40 of the Code of Federal Regulations along  
10 with all duly promulgated revisions as of the date of adoption of these Rules  
11 and Regulations is herewith adopted by reference.  
12  
13

14 R9-3-804. Standards of performance for Portland cement plants

15 Subpart F of Part 60, Title 40 of the Code of Federal Regulations along  
16 with all duly promulgated revisions as of the date of adoption of these Rules  
17 and Regulations is herewith adopted by reference.  
18  
19

20 R9-3-805. Standards of performance for nitric acid plants

21 Subpart G of Part 60, Title 40 of the Code of Federal Regulations along  
22 with all duly promulgated revisions as of the date of adoption of these Rules  
23 and Regulations is herewith adopted by reference.  
24  
25

26 R9-3-806. Standards of performance for sulfuric acid plants

1 Subpart H of Part 60, Title 40 of the Code of Federal Regulations along  
2 with all duly promulgated revisions as of the date of adoption of these Rules  
3 and Regulations is herewith adopted by reference.

4  
5  
6 R9-3-807. Standards of performance for asphalt concrete plants

7 Subpart I of Part 60, Title 40 of the Code of Federal Regulations along  
8 with all duly promulgated revisions as of the date of adoption of these Rules  
9 and Regulations is herewith adopted by reference.

10  
11  
12 R9-3-808. Standards of performance for petroleum refineries

13 Subpart J of Part 60, Title 40 of the Code of Federal Regulations along  
14 with all duly promulgated revisions as of the date of adoption of these Rules  
15 and Regulations is herewith adopted by reference.

16  
17  
18 R9-3-809. Standards of performance for storage vessels for petroleum liquids

19 Subpart K of Part 60, Title 40 of the Code of Federal Regulations along  
20 with all duly promulgated revisions as of the date of adoption of these Rules  
21 and Regulations is herewith adopted by reference.

22  
23  
24 R9-3-810. Standards of performance for secondary lead smelters

25 Subpart L of Part 60, Title 40 of the Code of Federal Regulations along  
26 with all duly promulgated revisions as of the date of adoption of these Rules

1 and Regulations is herewith adopted by reference.

2  
3  
4 R9-3-811. Standards of performance for secondary brass and bronze ingot pro-  
5 duction plants

6 Subpart M of Part 60, Title 40 of the Code of Federal Regulations along  
7 with all duly promulgated revisions as of the date of adoption of these Rules  
8 and Regulations is herewith adopted by reference.

9  
10  
11 R9-3-812. Standards of performance for iron and steel plants

12 Subpart N of Part 60, Title 40 of the Code of Federal Regulations along  
13 with all duly promulgated revisions as of the date of adoption of these Rules  
14 and Regulations is herewith adopted by reference.

15  
16  
17 R9-3-813. Standards of performance of sewage treatment plants

18 Subpart O of Part 60, Title 40 of the Code of Federal Regulations along  
19 with all duly promulgated revisions as of the date of adoption of these Rules  
20 and Regulations is herewith adopted by reference.

21  
22  
23 R9-3-814. Standards of performance for primary copper smelters

24 Subpart P of Part 60, Title 40 of the Code of Federal Regulations along  
25 with all duly promulgated revisions as of the date of adoption of these Rules  
26 and Regulations is herewith adopted by reference.

1 R9-3-815. Standards of performance for primary zinc smelters

2 Subpart Q of Part 60, Title 40 of the Code of Federal Regulations along  
3 with all duly promulgated revisions as of the date of adoption of these Rules  
4 and Regulations is herewith adopted by reference.

5  
6  
7 R9-3-816. Standards of performance for primary lead smelters

8 Subpart R of Part 60, Title 40 of the Code of Federal Regulations along  
9 with all duly promulgated revisions as of the date of adoption of these Rules  
10 and Regulations is herewith adopted by reference.

11  
12  
13 R9-3-817. Standards of performance for primary aluminum reduction plants

14 Subpart S of Part 60, Title 40 of the Code of Federal Regulations along  
15 with all duly promulgated revisions as of the date of adoption of these Rules  
16 and Regulations is herewith adopted by reference.

17  
18  
19 R9-3-818. Standards of performance for phosphate fertilizer industry: wet  
20 process phosphoric acid plants

21 Subpart T of Part 60, Title 40 of the Code of Federal Regulations along  
22 with all duly promulgated revisions as of the date of adoption of these Rules  
23 and Regulations is herewith adopted by reference.

1 R9-3-819. Standards of performance for phosphate fertilizer industry: super-  
2 phosphoric acid plants

3 Subpart U of Part 60, Title 40 of the Code of Federal Regulations along  
4 with all duly promulgated revisions as of the date of adoption of these Rules  
5 and Regulations is herewith adopted by reference.  
6  
7

8 R9-3-820. Standards of performance for phosphate fertilizer industry: Diammonium  
9 phosphate plants

10 Subpart V of Part 60, Title 40 of the Code of Federal Regulations along  
11 with all duly promulgated revisions as of the date of adoption of these Rules  
12 and Regulations is herewith adopted by reference.  
13  
14

15 R9-3-821. Standards of performance for phosphate fertilizer industry: triple  
16 superphosphate plants

17 Subpart W of Part 60, Title 40 of the Code of Federal Regulations along  
18 with all duly promulgated revisions as of the date of adoption of these Rules  
19 and Regulations is herewith adopted by reference.  
20  
21

22 R9-3-822. Standards of performance for phosphate fertilizer industry: granu-  
23 lar triple superphosphate storage facilities

24 Subpart X of Part 60, Title 40 of the Code of Federal Regulations along  
25 with all duly promulgated revisions as of the date of adoption of these Rules  
26 and Regulations is herewith adopted by reference.

1 R9-3-823. Standards of performance for coal preparation plants

2 Subpart Y of Part 60, Title 40 of the Code of Federal Regulations along  
3 with all duly promulgated revisions as of the date of adoption of these Rules  
4 and Regulations is herewith adopted by reference.  
5  
6

7 R9-3-824. Standards of performance for ferroalloy production facilities

8 Subpart Z of Part 60, Title 40 of the Code of Federal Regulations along  
9 with all duly promulgated revisions as of the date of adoption of these Rules  
10 and Regulations is herewith adopted by reference.  
11  
12

13 R9-3-825. Standards of performance for steel plants: electric arc furnaces

14 Subpart AA of Part 60, Title 40 of the Code of Federal Regulations along  
15 with all duly promulgated revisions as of the date of adoption of these Rules  
16 and Regulations is herewith adopted by reference.  
17  
18

19 R9-3-826. Standards of performance for kraft pulp mills

20 Subpart BB of Part 60, Title 40 of the Code of Federal Regulations along  
21 with all duly promulgated revisions as of the date of adoption of these Rules  
22 and Regulations is herewith adopted by reference  
23  
24

25 R9-3-827. Reserved

1 R9-3-828. Standards of performance for grain elevators

2 Subpart DD of Part 60, Title 40 of the Code of Federal Regulations along  
3 with all duly promulgated revisions as of the date of adoption of these Rules  
4 and Regulations is herewith adopted by reference.

5  
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7 R9-3-829. Reserved

8  
9  
10 R9-3-830. Reserved

11  
12  
13 R9-3-831. Reserved

14  
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16 R9-3-832. Standards of performance for lime manufacturing plants

17 Subpart HH of Part 60, Title 40 of the Code of Federal Regulations along  
18 with all duly promulgated revisions as of the date of adoption of these Rules  
19 and Regulations is herewith adopted by reference.

1 ARTICLE 9. HAZARDOUS AIR POLLUTANT STANDARDS

2 R9-3-901. General

3 Subpart A of Part 61, Title 40 of the Code of Federal Regulations along  
4 with all duly promulgated revisions as of the date of adoption of these Rules  
5 and Regulations is herewith adopted by reference except as follows:

6 1. "Administrator" shall be taken in this article to mean the Director  
7 of the Arizona Department of Health Services.

8 2. Delete section 61.04.  
9  
10

11 R9-3-902. Emission standard for asbestos

12 Subpart B of Part 61, Title 40 of the Code of Federal Regulations along  
13 with all duly promulgated revisions as of the date of adoption of these Rules  
14 and Regulations is herewith adopted by reference.  
15  
16

17 R9-3-903. Emission standard for beryllium

18 Subpart C of Part 61, Title 40 of the Code of Federal Regulations along  
19 with all duly promulgated revisions as of the date of adoption of these Rules  
20 and Regulations is herewith adopted by reference.  
21  
22

23 R9-3-904. Emission standard for beryllium rocket motor firing

24 Subpart D of Part 61, Title 40 of the Code of Federal Regulations along  
25 with all duly promulgated revisions as of the date of adoption of these Rules  
26 and Regulations is herewith adopted by reference.

1 R9-3-905. Emission standard for mercury

2 Subpart E of Part 61, Title 40 of the Code of Federal Regulations along  
3 with all duly promulgated revisions as of the date of adoption of these Rules  
4 and Regulations is herewith adopted by reference.  
5  
6

7 R9-3-906. Emission standard for vinyl chloride

8 Subpart F of Part 61, Title 40 of the Code of Federal Regulations along  
9 with all duly promulgated revisions as of the date of adoption of these Rules  
10 and Regulations is herewith adopted by reference.  
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ARTICLE 10. MOTOR VEHICLES

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COMBUSTION ENGINES: FUEL

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NO CHANGE

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1 ARTICLE 11. JURISDICTION AND AUTHORITY

2 R9-3-1101. Jurisdiction

3 A. The Department and Hearing Board shall have original jurisdiction and  
4 control over such air pollution matters, air pollution sources, installation  
5 permits, operating permits and violations that pertain to any major source, the  
6 construction or major alteration of which commenced after the effective date of  
7 this section. If the Director determines that a county or multi-county air  
8 quality control region has adopted regulations for the issuance and enforcement  
9 of installation and operating permits to any major source, the construction or  
10 a major alteration of which commenced after the effective date of this section,  
11 and the regulations contain standards at least equal to or more restrictive  
12 than those contained in this chapter, then the Director shall relinquish the  
13 authority to issue and enforce installation and operating permits to those  
14 sources which have the potential to emit less than 75 tons of air contaminants  
15 per day.

16 B. The Department and Hearing Board shall have exclusive jurisdiction and  
17 control over such air pollution matters, air pollution sources, installation  
18 permits, operating permits and violations that pertain to:

19 1. Any existing source which has the potential to emit 75 tons of air  
20 contaminants per day.

21 2. The smelting of copper ore.

22 3. The refining of crude oil.

23 4. Air pollution generated by operations and activities of all agencies  
24 and departments of the state and its political subdivisions.

25 5. Air pollution generated by mobile or portable combustion engines,  
26 machinery and equipment which are capable, without major alteration, of being

1 operated in more than one county.

2 6. Air pollution by motor vehicles.

3 C. Except as specified in subsections A. and B. of this section, juris-  
4 diction and control of air pollution shall be by the county or multi-county  
5 air quality control region pursuant to the provisions of Arizona Revised Stat-  
6 utes, Article 8, Chapter 6, Title 36. The county or multi-county air quality  
7 control region shall relinquish jurisdiction and control over such air pollu-  
8 tion matters, air pollution sources, installation permits, operating permits  
9 and violations as the Director designates and at such times as he asserts  
10 jurisdiction and control at the state level. The order of the Director which  
11 asserts jurisdiction and control shall specify the matters, geographical area  
12 or air pollution source or sources over which the Department shall exercise  
13 jurisdiction and control. Such state authority shall then be the sole and  
14 exclusive jurisdiction and control to the extent asserted and the provisions  
15 of Arizona Revised Statutes, Chapter 14, Title 36, and regulations in this  
16 chapter, shall govern except as provided therein, until jurisdiction and con-  
17 trol is surrendered by the Director to such county or region.

18 D. Upon written application by the control officer of a county or multi-  
19 county air quality control region, the Director may delegate to such county or  
20 region authority to carry out any of the provisions of Arizona Revised Statutes,  
21 Chapter 14, Title 36 or any Rules and Regulations of the Department for air  
22 pollution control.

23  
24  
25 R9-3-1102. Special inspection warrants

26 A. The Director or his designee may conduct such inspections as are

1 necessary for the enforcement of this chapter, but no such inspection shall  
2 include the interior of structures used primarily as private residences.

3 B. An inspection may be conducted without the consent of the owner or  
4 operator of the property being inspected only under the authority of a spe-  
5 cial inspection warrant issued by a magistrate.

6 C. A magistrate may issue a special inspection warrant upon a showing by  
7 the affidavit of the Director or his designee that consent to enter for inspec-  
8 tion purposes has been refused or circumstances justify the failure to seek  
9 such consent.

10 D. The warrant shall be void if not executed and returned to the magis-  
11 trate who issued it within ten days of its issuance.

12 E. Description of warrant:

13 1. The warrant shall be in substantially the following form:

14 "County of \_\_\_\_\_, State of Arizona, to the Director or his  
15 designee in the State of Arizona, proof by affidavit having been this day made  
16 before me by (person or persons whose affidavit has been taken) that in and  
17 upon certain premises in the (city, town or county) of \_\_\_\_\_ and more  
18 particularly described as follows: (describe the premises with reasonable  
19 particularity), and specifically the following records, devices and facili-  
20 ties upon such premises (describe with reasonable particularity the records,  
21 devices and facilities upon the premises that may be inspected), there now  
22 exists a reasonable governmental interest to determine if such premises comply  
23 with (section \_\_\_\_\_ of the Arizona Revised Statutes) and/or (section  
24 \_\_\_\_\_ of regulation or ordinance). You are therefore commanded in the  
25 daytime (or during reasonable business hours) to make an inspection of said  
26 premises as soon as practicable. Date, Signature and Title of Office."

1           2. The endorsement on the warrant shall be in substantially the  
2 following form:

3           "Received by me \_\_\_\_\_, 19\_\_, at \_\_\_\_\_ o'clock \_\_\_\_\_.  
4 (Name of Director or his deputy)."

5           3. The return of the officer shall be in substantially the following  
6 form:

7           "I hereby certify that by virtue of the within warrant I searched  
8 the named premises on (date) and found the following things (describe findings).  
9 Dated this \_\_\_\_\_ day of \_\_\_\_\_, 19\_\_, (Name of Director or his deputy)."

10          F. Any person who willfully refuses to permit an inspection authorized  
11 by a warrant provided for in this section shall be guilty of a misdemeanor  
12 pursuant to Arizona Revised Statutes § 36-1708.01(F).

LIST OF APPENDICES

Appendix 1. Filing Instructions for Installation Permit Application.

NO CHANGE

Appendix 2. Filing Instructions for Operating Permit Application

NO CHANGE

Appendix 3. (Reserved)

Appendix 4. Fee Schedule for Installation and Operating Permits.

NO CHANGE

Appendix 5. Fee Schedule for Conditional Permit.

NO CHANGE

Appendix 6. (Reserved)

Appendix 7. Requirements for a Supplemental Control System (SCS).

NO CHANGE

Appendix 8. Procedures for Utilizing the Sulfur Balance Method for  
Determining Sulfur Emissions.

NO CHANGE

1 APPENDIX 9. MONITORING REQUIREMENTS

2 A9.1. Unless otherwise approved by the Director or specified in applicable  
3 sections, the requirements of this appendix shall apply to all continuous  
4 monitoring systems required under applicable sections.

5 A9.2. All continuous monitoring systems and monitoring devices shall be  
6 installed and operational prior to conducting performance tests under regula-  
7 tion R9-3-312. Verification of operational status shall, as a minimum,  
8 consist of the following:

9 A9.2.1. For continuous monitoring systems referenced in paragraph A9.3.1. of  
10 this section, completion of the conditioning period specified by applicable  
11 requirements in the Arizona Testing Manual.

12 A9.2.2. For continuous monitoring systems referenced in paragraph A9.3.2. of  
13 this section, completion of seven days of operation.

14 A9.2.3. For monitoring devices referenced in other applicable sections, comple-  
15 tions of the manufacturer's written requirements or recommendations for  
16 checking the operation or calibration of the device.

17 A9.3. During any performance tests required under regulation R9-3-312 or within  
18 30 days thereafter and at such other times as may be required by the Director,  
19 the owner or operator of any affected facility shall conduct continuous  
20 monitoring system performance evaluations and furnish the Director within 60  
21 days thereof, two, or upon request, more copies of a written report of the  
22 results of such tests. The continuous monitoring system performance evalua-  
23 tions shall be conducted in accordance with the following specifications and  
24 procedures:

25 A9.3.1. Continuous monitoring systems listed within this paragraph except as  
26 provided in paragraph A9.3.2. of this section shall be evaluated in accordance

1 with the requirements and procedures contained in the applicable performance  
2 specification of the Arizona Testing Manual.

3 A9.3.1.1. Continuous monitoring systems for measuring opacity of emissions  
4 shall comply with Performance Specification 1.

5 A9.3.1.2. Continuous monitoring systems for measuring nitrogen oxides emissions  
6 shall comply with Performance Specification 2.

7 A9.3.1.3. Continuous monitoring systems for measuring sulfur dioxide emissions  
8 shall comply with Performance Specification 2.

9 A9.3.1.4. Continuous monitoring systems for measuring the oxygen content or  
10 carbon dioxide content of effluent gases shall comply with Performance Speci-  
11 fication 3.

12 A9.3.2. An owner or operator who, prior to September 11, 1974, entered into a  
13 binding contractual obligation to purchase specific continuous monitoring  
14 system components except as referenced by subparagraph A9.3.2.3. of this  
15 section shall comply with the following requirements:

16 A9.3.2.1. Continuous monitoring systems for measuring opacity of emissions shall  
17 be capable of measuring emission levels within  $\pm 20$  percent. The Calibration  
18 Error Test and associated calculation procedures set forth in Performance  
19 Specification 1 of the Arizona Testing Manual shall be used for demonstrating  
20 compliance with this specification.

21 A9.3.2.2. Continuous monitoring systems for measurement of nitrogen oxides or  
22 sulfur dioxide shall be capable of measuring emission levels within  $\pm 20$  per-  
23 cent with a confidence level of 95 percent. The Calibration Error Test, the  
24 Field Test for Accuracy (Relative), and associated operating and calculation  
25 procedures set forth in Performance Specification 2 of the Arizona Testing  
26 Manual shall be used for demonstrating compliance with this specification.

1 A9.3.2.3. Owners or operators of all continuous monitoring systems installed  
2 on an affected facility prior to October 6, 1975 are not required to conduct  
3 tests under subparagraphs A9.3.2.1. and/or A9.3.2.2. of this section unless  
4 requested by the Director.

5 A9.3.3. All continuous monitoring systems referenced by paragraph A9.3.2. of  
6 this section shall be upgraded or replaced (if necessary) with new continu-  
7 ous monitoring systems, and such improved systems shall be demonstrated to  
8 comply with applicable performance specifications under paragraph A9.3.1. of  
9 this section by September 11, 1979.

10 A9.4. Owners or operators of all continuous monitoring systems installed in  
11 accordance with the provisions of these regulations shall check the zero  
12 and span drift at least once daily in accordance with the method prescribed  
13 by the manufacturer of such systems unless the manufacturer recommends adjust-  
14 ments at shorter intervals, in which case such recommendations shall be  
15 followed. The zero and span shall, as a minimum, be adjusted whenever the  
16 24-hour zero drift or 24-hour calibration drift limits of the applicable  
17 performance specifications in the Arizona Testing Manual are exceeded. For  
18 continuous monitoring systems measuring opacity of emissions, the optical  
19 surfaces exposed to the effluent gases shall be cleaned prior to performing  
20 the zero or span drift adjustments except that for systems using automatic  
21 zero adjustments, the optical surfaces shall be cleaned when the cumulative  
22 automatic zero compensation exceeds four percent opacity. Unless otherwise  
23 approved by the Director, the following procedures, as applicable, shall be  
24 followed:

25 A9.4.1. For extractive continuous monitoring systems measuring gases, minimum  
26 procedures shall include introducing applicable zero and span gas mixtures

1 into the measurement system as near the probe as practical. Span and zero  
2 gases certified by their manufacturer to be traceable to National Bureau of  
3 Standards reference gases shall be used whenever these reference gases are  
4 available.

5 The span and zero gas mixtures shall be the same composition as specified in  
6 The Arizona Testing Manual. Every six months from date of manufacture, span  
7 and zero gases shall be reanalyzed by conducting triplicate analyses with  
8 Reference Methods 6 for  $\text{SO}_2$ , 7 for  $\text{NO}_x$ , and 3 for  $\text{O}_2$  and  $\text{CO}_2$ , respectively.  
9 The gases may be analyzed at less frequent intervals if longer shelf lives are  
10 guaranteed by the manufacturer.

11 A9.4.2. For non-extractive continuous monitoring systems measuring gases,  
12 minimum procedures shall include upscale check(s) using a certified calibra-  
13 tion gas cell or test cell which is functionally equivalent to a known gas  
14 concentration. The zero check may be performed by computing the zero value  
15 from upscale measurements or by mechanically producing a zero condition.

16 A9.4.3. For continuous monitoring systems measuring opacity of emissions,  
17 minimum procedures shall include a method for producing a simulated zero  
18 opacity condition and an upscale (span) opacity condition using a certified  
19 neutral density filter or other related technique to produce a known obscura-  
20 tion of the light beam. Such procedures shall provide a system check of the  
21 analyzer internal optical surfaces and all electronic circuitry including the  
22 lamp and photodetector assembly.

23 A9.5. Except for system breakdowns, repairs, calibration checks, and zero and  
24 span adjustments required under paragraph A9.4. of this section, all continu-  
25 ous monitoring systems shall be in continuous operation and shall meet  
3 minimum frequency of operation requirements as follows:

1 A9.5.1. All continuous monitoring systems referenced by paragraphs A9.3.1. and  
2 A9.3.2 of this section for measuring opacity of emissions shall complete a  
3 minimum of one cycle of operation (sampling, analyzing, and data recording)  
4 for each successive 10-second period.

5 A9.5.2. All continuous monitoring systems referenced by paragraph A9.3.1. of  
6 this regulation for measuring oxides of nitrogen, sulfur dioxide, carbon  
7 dioxide, or oxygen shall complete a minimum of one cycle of operation (samp-  
8 ling, analyzing, and data recording) for each successive 15-minute period.

9 A9.5.3. All continuous monitoring systems referenced by paragraph A9.3.2. of  
10 this section, except opacity, shall complete a minimum of one cycle of opera-  
11 tion (sampling, analyzing, and data recording) for each successive one-hour  
12 period.

13 A9.6. All continuous monitoring systems for monitoring devices shall be installed  
14 such that representative measurements of emissions or process parameters from  
15 the affected facility are obtained. Additional procedures for location of  
16 continuous monitoring systems contained in the applicable Performance Specifi-  
17 cations of the Arizona Testing Manual shall be used.

18 A9.7. When the effluents from a single affected facility or two or more  
19 affected facilities subject to the same emission standards are combined  
20 before being released to the atmosphere, the owner or operator may install  
21 applicable continuous monitoring systems on each effluent or on the combined  
22 effluent. When the affected facilities are not subject to the same emission  
23 standards, separate continuous monitoring systems shall be installed on each  
24 effluent. When the effluent from one affected facility is released to the  
25 atmosphere through more than one point, the owner or operator shall install  
26 applicable continuous monitoring systems on each separate effluent unless

1 the installation of fewer systems is approved by the Director.

2 A9.8. Owners or operators of all continuous monitoring systems for measurement  
3 of opacity shall reduce all data to six-minute averages and for systems other  
4 than opacity to one-hour averages, respectively. Six minute opacity averages  
5 shall be calculated from 24 or more data points equally spaced over each  
6 six-minute period. For systems other than opacity, one-hour averages shall  
7 be computed from four or more data points equally spaced over each one-hour  
8 period. Data recorded during periods of system breakdowns, repairs, calibra-  
9 tion checks, and zero and span adjustments shall not be included in the data  
10 averages computed under this paragraph. An arithmetic or integrated average  
11 of all data may be used. The data output of all continuous monitoring systems  
12 may be recorded in reduced or nonreduced form (e.g. ppm pollutant and percent  
13 O<sub>2</sub> or lb/million Btu of pollutant). All excess emissions shall be converted  
14 into units of the standard using the applicable conversion procedures specified  
15 in subparts. After conversion into units of the standard, the data may be  
16 rounded to the same number of significant digits used in these regulations  
17 to specify the applicable standard (e.g., rounded to the nearest one percent  
18 opacity).

19 A9.9. Upon written application by an owner or operator, the Director may approve  
20 alternatives to any monitoring procedures or requirements of these regulations  
21 including, but not limited to the following:

22 A9.9.1. Alternative monitoring requirements when installation of a continuous  
23 monitoring system or monitoring device specified by these regulations would  
24 not provide accurate measurements due to liquid water or other interferences  
25 caused by substances with the effluent gases.

A9.9.2. Alternative monitoring requirements when the affected facility is

1 infrequently operated.

2 A9.9.3. Alternative monitoring requirements to accommodate continuous monitor-  
3 ing systems that require additional measurements to correct for stack moisture  
4 conditions.

5 A9.9.4. Alternative locations for installing continuous monitoring systems  
6 or monitoring devices when the owner or operator can demonstrate that instal-  
7 lation at alternate locations will enable accurate and representative  
8 measurements.

9 A9.9.5. Alternative methods of converting pollutant concentration measurements  
10 to units of the standards.

11 A9.9.6. Alternative procedures for performing daily checks of zero and span  
12 drift that do not involve use of span gases or test cells.

13 A9.9.7. Alternatives to the ASTM test methods or sampling procedures specified  
14 by any subpart.

15 A9.9.8. Alternative continuous monitoring systems that do not meet the design  
16 or performance requirements in Performance Specification 1 in the Arizona  
17 Testing Manual but adequately demonstrate a definite and consistent relation-  
18 ship between its measurements and the measurements of opacity by a system  
19 complying with the requirements in Performance Specification 1. The Director  
20 may require that such demonstration be performed for each affected facility.

21 A9.9.9. Alternative monitoring requirements when the effluent from a single  
22 affected facility or the combined effluent from two or more affected facilities  
23 are released to the atmosphere through more than one point.

## APPENDIX 10. EVALUATION OF AIR QUALITY DATA

### A10.1. General Statistical Requirements

A10.1.1. The measurements of air quality shall be corrected to a reference temperature of 25°C and to a reference pressure of 760 millimeters of mercury. For these reference conditions the following conversion factors shall be used:

Carbon monoxide:  $\text{ppm} \times 1.146 = \text{mg/m}^3$

Hydrocarbons:  $\text{ppm} \times 656 = \text{ug/m}^3$

Nitrogen dioxide:  $\text{ppm} \times 1882 = \text{ug/m}^3$

Photochemical oxidants:  $\text{ppm} \times 1963 = \text{ug/m}^3$

Sulfur dioxide:  $\text{ppm} \times 2620 = \text{ug/m}^3$

$\text{mg/m}^3$  and  $\text{ug/m}^3$  are abbreviations for milligrams per cubic meter and micrograms per cubic meter, respectively.

A10.1.2. For purposes of reporting and determining compliance with ambient air quality standards, all ambient air quality data shall be expressed in micrograms per cubic meter, except for carbon monoxide which shall be expressed in milligrams per cubic meter.

### A.10.1.3. Significant Figures

#### A10.1.3.1. Monitoring Instrument Response

The electrical response of monitoring instruments shall be measured and processed to the following degrees of precision:

Carbon monoxide 0.5 ppm

Hydrocarbons (total) 0.01 ppm

Methane 0.01 ppm

Non-methane hydrocarbons 0.01 ppm

Nitrogen dioxide 0.01 ppm

1                   Photochemical oxidants                   0.005 ppm

2                   Sulfur dioxide                   0.01 ppm

3    A10.1.3.2.   Reporting Raw Air Quality Data

4       The raw air quality data shall be reported to the following degrees of  
5       precision:

6                   Carbon monoxide                   0.5 mg/m<sup>3</sup>

7                   Hydrocarbons (total)               1.0 ug/m<sup>3</sup>

8                   Methane                   1.0 ug/m<sup>3</sup>

9                   Non-methane hydrocarbons           1.0 ug/m<sup>3</sup>

10                  Nitrogen dioxide               1.0 ug/m<sup>3</sup>

11                  Photochemical oxidants           1.0 ug/m<sup>3</sup>

12                  Sulfur dioxide               1.0 ug/m<sup>3</sup>

13                  Total suspended particulates   1.0 ug/m<sup>3</sup>

14                  Benzene soluble organics       0.1 ug/m<sup>3</sup>

15                  Lead                   0.1 ug/m<sup>3</sup>

16                  Nitrates               0.1 ug/m<sup>3</sup>

17                  Sulfates               0.1 ug/m<sup>3</sup>

18    A10.1.3.3.   Computational Procedures

19       All computations shall be made to one more decimal place than shown in  
20       A10.1.3.2. above. If the least significant figure is 5 or greater, the com-  
21       puted value shall be rounded up to the required number of decimal places.

22       If the least significant figure is 4 or less, the computed value shall be  
23       rounded down to the required number of decimal places.

24    A10.1.4.   Annual mean pollutant concentrations and compliance with the annual  
25       ambient air quality standards shall be based on calendar year means only.

26    A10.2.   Statistical Requirements for Manual Sampling Techniques-High Volume

1        Samplers and Gas Bubblers

2        A10.2.1. For computing annual means there shall be at least ten samples per  
3        quarter, based on a sampling frequency of at least one sample every six  
4        days. The sampling period shall be 24 hours, starting at midnight and end-  
5        ing the following midnight.

6        A10.2.2. For determining compliance with 24-hour ambient air quality stan-  
7        dards, the sampling period shall be 24 hours, starting at midnight and end-  
8        ing on the following midnight.

9        A10.3. Statistical Requirements for Continuous Monitors

10       A10.3.1. Hourly averages shall be computed for each discrete clock hour using  
11       the data measured for the preceding 60-minute period. All measurements of  
12       the analyzer shall be used for computing hourly averages which are the basis  
13       for all other averages.

14       A10.3.2. Determining Compliance with Ambient Air Quality Standards

15       Any three or eight, consecutive, hourly averages shall be used to determine  
16       compliance with the three or eight-hour ambient air quality standards pro-  
17       vided the minimum number of observations required in A10.3.4. are available.  
18       If a violation of a standard occurs, no hourly averages used to compute that  
19       violation shall be used to compute additional violations of the same standard.  
20       In other words, the time periods for violations of the same standard cannot  
21       overlap. For example, a maximum of two violations of the same three hour  
22       standard could be recorded at the same monitor in any period of six consecu-  
23       tive hours. For determining compliance with 24-hour ambient air quality  
24       standards, 24 hourly averages for a calendar day shall be used provided the  
25       minimum number of observations required in A10.3.4. are available.

26       A10.3.3. Determining Maximum Concentrations

1 For determining maximum three or eight hour concentrations for information,  
2 planning, and reporting requirements, any three or eight, consecutive,  
3 hourly averages may be used provided the minimum number of observations  
4 required in A10.3.4. are available. The time period for the maximum concen-  
5 tration may overlap time periods for violations.

6 A10.3.4. Minimum requirements for statistical validity for averaging times  
7 shall be as follows:

<u>Time Interval</u>	<u>Minimum Number of Observations</u>
1 hour	45 minutes of measured concentrations
3 hours	3 consecutive valid hourly averages
8 hours	6 valid hourly averages
24 hours	18 valid hourly averages within a calendar day
Monthly	Valid hourly data for at least 75% of the hours in the month
Quarterly	3 consecutive valid monthly averages
Annual	6,570 hourly averages with at least 2 months, each having 75% data recovery, per quarter, and at least 9 months, each having 75% data recovery per year. All valid hourly averages shall be used to compute the annual averages.

1 APPENDIX 11. ALLOWABLE PARTICULATE EMISSIONS COMPUTATIONS

2 A12.1. Figure 1, hereto, plots the formulae for determining allowable particu-  
3 late emissions from fuel burning equipment, based on the heat input to the  
4 equipment.

5 A12.2. Figure 2, hereto, plots the formulae for determining allowable particu-  
6 late emissions from process industries, based on the process weight rate of  
7 the industry. Plots are shown for industries located both within and out-  
8 side of the boundaries of the Phoenix/Tucson Air Quality Control Region  
9 (PTAQCR).

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FUEL BURNING EQUIPMENT

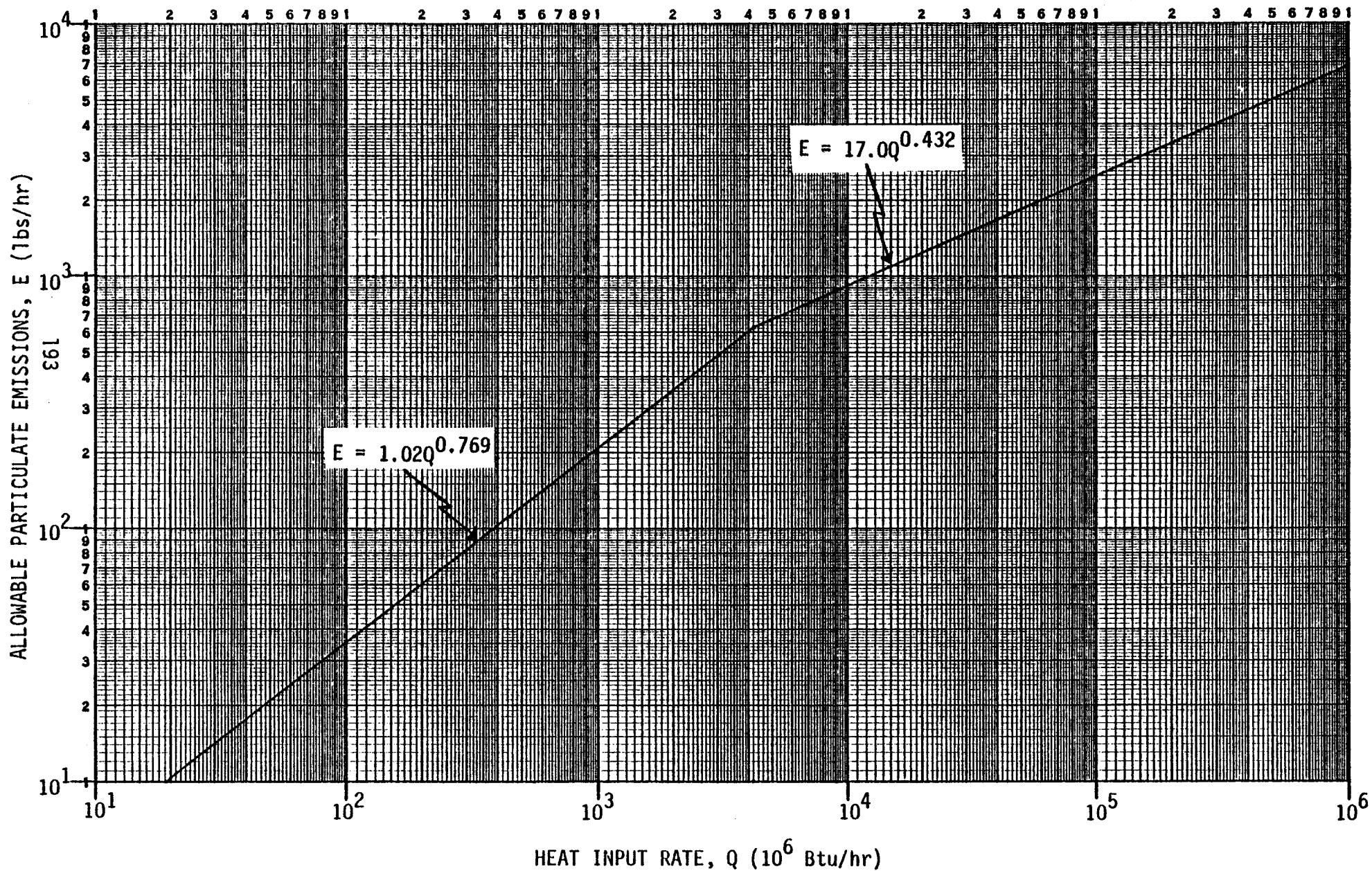


FIGURE 1

PROCESS INDUSTRIES

PROCESS WEIGHT RATE, P (Tons/hr)

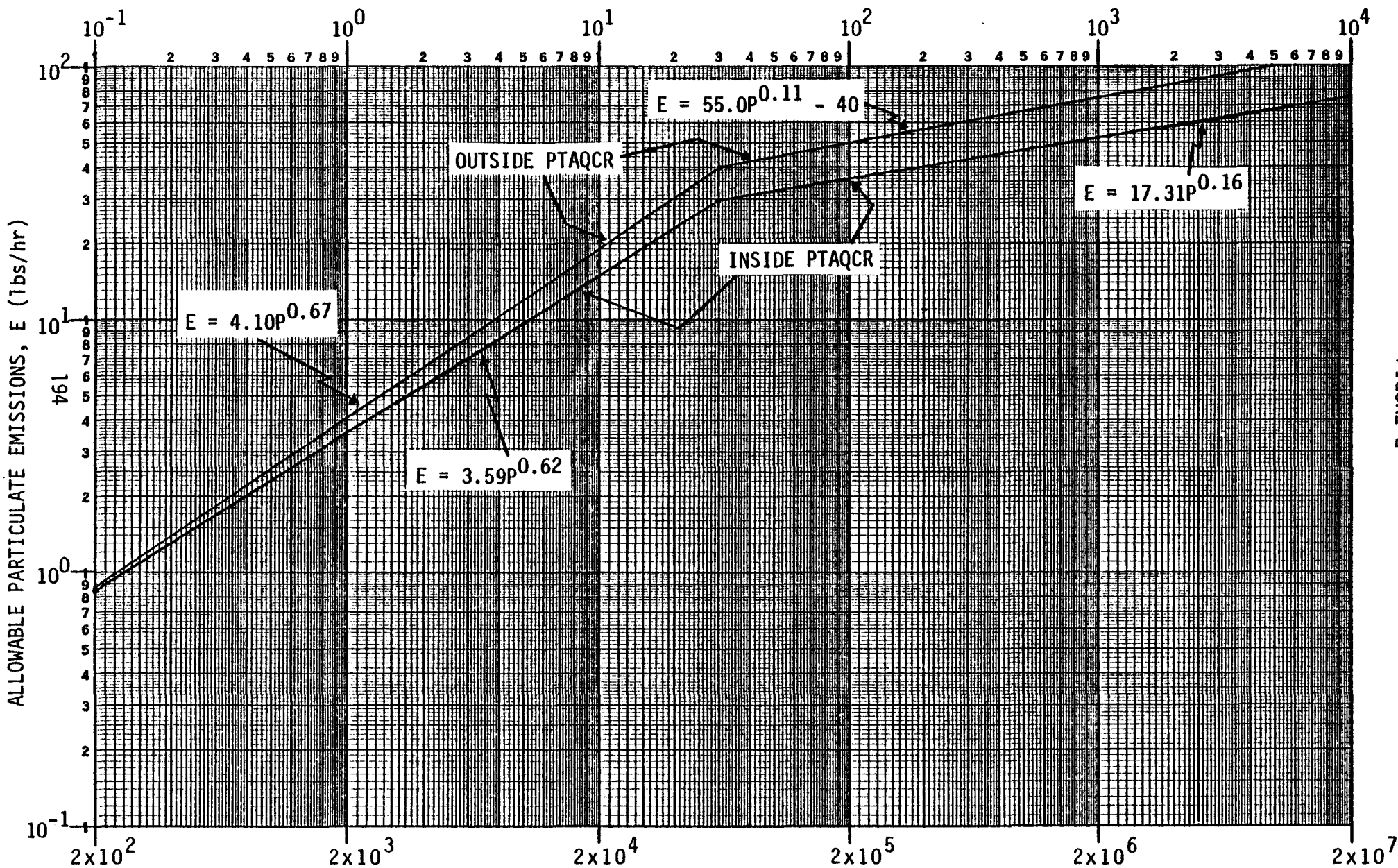


FIGURE 2

1 These regulations are to be effective on May 14, 1979.


2

3 DATED this 5<sup>th</sup> day of January, 1979.

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\_\_\_\_\_  
Ted Williams  
Deputy Director